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Government
Publications

Canada. Parliament. House of Commons.
Standing Committee
on National Resources and
public works.

Minutes of proceedings
and evidence. 1968-69. No 1-28.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968

STANDING COMMITTEE

ON

NATIONAL RESOURCES
AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

PROCEEDINGS

No. 1-28

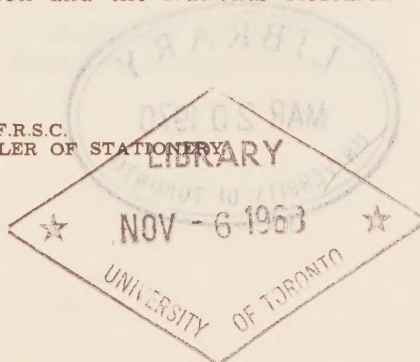
THURSDAY, OCTOBER 17, 1968 -69

INCLUDING

Appendix A

Revised Main Estimates of the Department of *Energy, Mines and Resources* including the Atomic Energy Control Board, *Atomic Energy of Canada Limited*, *Dominion Coal Board*, *National Energy Board*, and the *International Joint Commission* and the *National Research Council*.

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968



STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

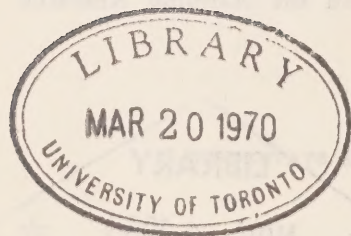
Chairman: Mr. Leonard Hopkins
Vice-Chairman: ¹Mr. K. R. Hymmen
and Messrs.

Aiken	Deakon	Moores (<i>Bonavista- Trinity-Conception</i>)
Beaudoin	Gilbert	Orange
Chappell	Grills	Ricard
Code	Harding	Serré
Comeau	Harries	Smerchanski
Danson	Langlois	Sulatycky—(20).

(Quorum 11)

R. V. Virr,
Clerk of the Committee.

¹Replaced Mr. Laflamme on October 15, 1968.



ORDERS OF REFERENCE

HOUSE OF COMMONS
TUESDAY, October 8, 1968.

Resolved,—That the following Members do compose the Standing Committee on National Resources and Public Works:

Messrs.

Aiken,	Gilbert,	Moores,
Beaudoin,	Grills,	Orange,
Chappell,	Harding,	Ricard,
Code,	Harries,	Serré,
Comeau,	Hopkins,	Smerchanski,
Danson,	Laflamme,	Sulatycky—(20).
Deakon,	Langlois,	

TUESDAY, October 15, 1968.

Ordered,—That the name of Mr. Hymmen be substituted for that of Mr. Laflamme on the Standing Committee on National Resources and Public Works.

WEDNESDAY, October 16, 1968.

Ordered,—That, saving always the powers of the Committee of Supply in relation to the voting of public moneys, the items listed in the Revised Main Estimates for 1968-69, relating to Atomic Energy Control Board, Atomic Energy of Canada Limited, the Dominion Coal Board, Energy, Mines and Resources, the International Joint Commission, the National Energy Board and the National Research Council, be withdrawn from the Committee of Supply and referred to the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER
The Clerk of the House of Commons

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MINUTES OF PROCEEDINGS

THURSDAY, October 17, 1968

(1)

The Standing Committee on National Resources and Public Works met this day at 10.35 hours for the purpose of organization.

Members present: Messrs. Aiken, Beaudoin, Chappell, Code, Comeau, Dan-son, Deakon, Gilbert, Harding, Harries, Hopkins, Hymmen, Langlois, Orange, Serré, Smerchanski, Sulatycky (17).

The Clerk attending and having called for nominations to elect a Chair-
man, it was moved by Mr. Langlois, seconded by Mr. Orange, that Mr. Leonard
Hopkins be elected Chairman of this Committee.

Moved by Mr. Aiken, seconded by Mr. Comeau,
Agreed,—That nominations be closed.

The Clerk put Mr. Langlois' motion and it was *resolved* in the affirmative.
Mr. Hopkins took the Chair and thanked the Committee for the honour.

The Chairman called for nominations for the election of a Vice-Chairman.

It was moved by Mr. Deakon, seconded by Mr. Smerchanski,
That Mr. Hymmen be elected Vice-Chairman.

It was moved by Mr. Sulatycky,
Agreed,—That nominations be closed.

The Chairman put Mr. Deakon's motion and it was *resolved* in the affirma-
tive.

It was moved by Mr. Langlois, seconded by Mr. Deakon,
Agreed,—That the Subcommittee on Agenda and Procedure be comprised
of the Chairman, the Vice-Chairman and *Four* other members appointed by the
Chairman after the usual consultations with the *Whips* of the different parties.

It was moved by Mr. Deakon, seconded by Mr. Serré,
Agreed,—That the Committee print 750 copies in English and 250 copies in
French of its Minutes of Proceedings and Evidence.

It was moved by Mr. Hymmen,
Agreed,—That the items listed in the Revised Main Estimates for 1968-69
relating to the Department of Energy, Mines and Resources including the
Atomic Energy Control Board, Atomic Energy of Canada Limited, Dominion
Coal Board, National Energy Board and the International Joint Commission
and the National Research Council, be printed as an appendix in Issue No. 1 of
the proceedings of this Committee. (*See Appendix "A"*)

At 10.45 o'clock, on motion of Mr. Smerchanski, the Committee adjourned
to the call of the Chair.

R. V. Virr,
Clerk of the Committee.

APPENDIX "A"

ENERGY, MINES AND RESOURCES

REVISED ESTIMATES, 1968-69

ENERGY, MINES AND RESOURCES

No. of Vote	Service	1968-69	1967-68	Change	
				Increase	Decrease
		\$	\$	\$	\$
	A-DEPARTMENT				
(S)	Minister of Energy, Mines and Resources— Salary and Motor Car Allowance (Details, page 72).....	17,000	17,000		
	ADMINISTRATION SERVICES				
1	Departmental Administration including Cana- da's fee for membership in the Pan-American Institute of Geography and History (Details, page 72).....	4,555,000	3,085,685	1,469,315	
5	Construction or Acquisition of Buildings, Works, Land and Equipment including Com- mon-use Field Survey Equipment (Details, page 74).....	631,000	884,000	.....	253,000
		5,186,000	3,969,685	1,216,315	
	MINES, MINERALS, ENERGY AND GEOSCIENCES				
15	Administration, Operation and Maintenance in- cluding the administration of the Explosives Act, the purchase of air photography, the expenses of the Interdepartmental Commit- tee on Air Surveys, the National Advisory Committee on Control Surveys and Mapping, the National Advisory Committee on Re- search in Geological Sciences, the National Advisory Committee on Research in Mining and Mineral Processing, the Canadian Per- manent Committee on Geographical Names, the National Committee for Canada of the International Astronomical Union and authority to make recoverable advances not exceeding the amount of the share of the United States Government of the cost of binding annual reports and maintaining boundary range lights (Details, page 74).....	35,879,700	31,895,115	3,984,585	
20	Construction or Acquisition of Buildings, Works, Land and Equipment (Details, page 92)....	4,530,000	4,756,300	.....	226,300

No. of Vote	Service	1968-69	1967-68	Change	
				Increase	Decrease
		\$	\$	\$	\$
	A—DEPARTMENT (Continued)				
	MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)				
25	Grants, contributions and subventions as detailed in the Estimates, Canada's fees for membership in the International Organizations detailed in the Estimates, Canada's share of the cost of the Geological Liaison Office, British Commonwealth Scientific Conference, London, England, and Canada's share of the cost of the Commonwealth Committee on mineral processing (Details, page 95).....	1,464,000	3,220,900	.....	1,756,900
(S)	Payments under the Emergency Gold Mining Assistance Act (Details, page 98).....	15,600,000	14,800,000	800,000	
		57,473,700	54,672,315	2,801,385	
	WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS				
40	Administration, Operation and Maintenance including the expenses of the Saskatchewan-Nelson Basin Board and the Atlantic Tidal Power Programming Board including the recoverable expenditures relating thereto, recoverable expenditures incurred in respect of Regional Water Resources Planning Investigations and Water Resources Inventories and authority to make recoverable advances in amounts not exceeding in the aggregate the amount of the shares of the Province of Manitoba and of the Province of Ontario of the cost of regulating the levels of Lake of the Woods and Lac Seul and the amount of the share of provincial and outside agencies of the cost of hydrometric surveys, and the expenses of the National Advisory Committee on Geographical Research and the National Committee for Canada of the International Geographical Union (Details, page 98).....	30,457,400	25,959,850	4,497,550	
45	Construction or Acquisition of Buildings, Works, Land and Equipment including authority to make recoverable advances in amounts not exceeding in the aggregate the amount of the shares of provincial and outside agencies of the cost of hydrometric surveys (Details, page 103).....	11,202,000	14,525,000	.....	3,323,000

No. of Vote	Service	1968-69	1967-68	Change	
				Increase	Decrease
		\$	\$	\$	\$
	A-DEPARTMENT (Continued)				
	WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS (Continued)				
50	Contributions to the Provinces towards the construction of dams and other works to assist in the conservation and control of water resources in accordance with agreements entered into between Canada and the Provinces, Canada's fees for membership in the International Hydrographic Bureau and the International Geographical Union, and grants and other contributions as detailed in the Estimates (Details, page 104).....	5,889,300	10,521,150	.....	4,631,850
		47,548,700	51,006,000	.....	3,457,300
	SUMMARY				
	To be voted.....	94,608,400	94,848,000	.....	239,600
	Authorized by Statute.....	15,617,000	14,817,000	800,000	
		110,225,400	109,665,000	560,400	
	B-ATOMIC ENERGY CONTROL BOARD				
55	Administration Expenses of the Atomic Energy Control Board (Details, page 107).....	392,000	307,400	84,600	
60	Grants for researches and investigations with respect to atomic energy (Details, page 107).....	3,920,000	2,500,000	1,420,000	
		4,312,000	2,807,400	1,504,600	
	C-ATOMIC ENERGY OF CANADA LIMITED (RESEARCH PROGRAM)				
65	Current Operation and Maintenance, including expendable research equipment (Details, page 108).....	58,919,000	56,883,000	2,036,000	
70	Construction or Acquisition of Buildings, Works, Land and Equipment (Details, page 108).....	9,681,000	9,617,000	64,000	
		68,600,000	66,500,000	2,100,000	

No. of Vote	Service	1968-69	1967-68	Change	
				Increase	Decrease
		\$	\$	\$	\$
	D—DOMINION COAL BOARD				
75	Administration and Investigations of the Dominion Coal Board (Details, page 109)....	150,000	236,339	.....	86,339
(S)	Payments in connection with the movements of coal under conditions prescribed by the Governor in Council (Details, page 109).....	4,672,686	30,390,661	.....	25,717,975
80	Payment to New Brunswick in the fiscal year 1968-69 of \$2,800,000 and annual payments in each of the four fiscal years commencing on the first day of April, 1969 and ending on the 31st day of March, 1973 of \$4,050,000 to assist the Province in its program of rationalization of the Minto coal fields, in accordance with terms and conditions set out in an agreement entered into between New Brunswick and Canada with the approval of the Governor in Council, and to authorize in accordance with the agreement the transfer to New Brunswick of the rights, benefits and obligations existing and outstanding under all loan agreements entered into pursuant to the Coal Production Assistance Act with coal producers in New Brunswick, the principal sum of which, carried as an asset of Canada, amounted to \$597,314 as of March 31, 1968; amount required for 1968-69 (Details, page 110).....	3,397,314	.....	3,397,314	
—	Appropriation not required for 1968-69 (Details, page 110).....	.....	2,000,000	.....	2,000,000
		8,220,000	32,627,000	.....	24,407,000
	SUMMARY				
	To be voted.....	3,547,314	2,236,339	1,310,975	
	Authorized by Statute.....	4,672,686	30,390,661	.....	25,717,975
		8,220,000	32,627,000	.....	24,407,000
	E—NATIONAL ENERGY BOARD				
85	Administration (Details, page 111).....	1,602,000	1,500,000	102,000	

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT		
		Approximate Value of Major Services not Included in these Estimates		
		Accommodation (provided by the Department of Public Works).....	5,373,600	4,384,400
		Accommodation (in this Department's own buildings)...	655,100	417,700
		Accounting and cheque issue services (Comptroller of the Treasury).....	488,000	380,600
		Contributions to Superannuation Account (Treasury Board).....	2,691,800	2,861,400
		Contributions to Canada Pension Plan Account and Quebec Pension Plan Account (Treasury Board)...	370,900	419,800
		Employee surgical-medical insurance premiums (Treasury Board).....	89,700	239,900
		Employee compensation payments (Department of Labour).....	26,800	24,400
		Carrying of franked mail (Post Office Department)....	124,700	84,200
			9,820,600	8,812,400
		Statutory—Minister of Energy, Mines and Resources—Salary and Motor Car Allowance		
		Salary.....(1)	15,000	15,000
		Motor Car Allowance.....(1)	2,000	2,000
			17,000	17,000
		ADMINISTRATION SERVICES		
		Vote 1—Departmental Administration including Canada's fee for membership in the Pan-American Institute of Geography and History		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1	1	Deputy Minister (\$28,750)		
	2	Senior Officer 3 (\$20,500-\$25,750)		
2	9	Senior Officer 2 (\$18,500-\$23,500)		
	1	Senior Officer 1 (\$16,500-\$21,250)		
	1	(\$14,000-\$16,000)		
	1	(\$12,000-\$14,000)		
		Administrative and Foreign Service:		
3		(\$18,000-\$21,000)		
3	3	(\$16,000-\$18,000)		
6	1	(\$14,000-\$16,000)		
16	4	(\$12,000-\$14,000)		
23	9	(\$10,000-\$12,000)		
59	33	(\$8,000-\$10,000)		
34	31	(\$6,000-\$8,000)		
4	4	(\$4,000-\$6,000)		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		ADMINISTRATION SERVICES (Continued)		
		Vote 1 (Continued)		
		Salaried Positions: (Continued)		
		Technical, Operational and Service:		
1		(\$10,000-\$12,000)		
1		(\$8,000-\$10,000)		
6	10	(\$6,000-\$8,000)		
17	16	(\$4,000-\$6,000)		
13	4	(Under \$4,000)		
		Administrative Support:		
1	12	(\$8,000-\$10,000)		
19	15	(\$6,000-\$8,000)		
120	82	(\$4,000-\$6,000)		
47	49	(Under \$4,000)		
		Prevailing Rate Positions:		
1	1	(Full Time)		
	1	(Seasonal)		
377	290	Continuing Establishment.....	2,543,300	1,932,365
(377)	(290)	Casuals and Others.....	60,700	34,500
(12)	(4)			
(389)	(294)	Salaries and Wages..... (1)	2,604,000	1,966,865
		Overtime..... (1)	10,800	16,100
		Memberships..... (1)		2,100
		Travelling and Removal Expenses..... (2)	94,300	57,830
		Freight, Express and Cartage..... (2)	78,800	83,200
		Postage..... (2)	33,000	40,000
		Telephones and Telegrams..... (2)	31,500	25,990
		Publication of Departmental Reports..... (3)	84,800	22,200
		Exhibits, Advertising and other Informational		
		Material..... (3)	132,000	137,000
		Professional and Special Services..... (4)	530,300	168,900
		Storage of Equipment and Supplies..... (4)	10,000	20,000
		Rental of Equipment..... (5)	68,300	
		Repairs and Upkeep of Buildings..... (6)	41,600	3,000
		Repairs and Upkeep of Camp and Field Equipment (6)	101,000	125,000
		Office Stationery, Supplies and Equipment..... (7)	252,900	187,850
		Camp and Field Materials and Supplies..... (7)	458,000	210,000
		Membership, Pan-American Institute of Geography		
		and History..... (10)	17,000	16,400
		Sundries..... (12)	6,700	5,250
			4,555,000	3,085,685
		Expenditure		
		1965-66..... \$ 1,971,555		
		1966-67..... 2,670,507		
		1967-68 (estimated)..... 3,085,000		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		ADMINISTRATION SERVICES (Continued)		
		Vote 5—Construction or Acquisition of Buildings, Works, Land and Equipment Including Common-Use Field Survey Equipment		
		Acquisition of Camp and Field Equipment..... (9)	533,000	756,000
		Acquisition of Other Equipment..... (9)	98,000	128,000
			631,000	884,000
		Expenditure		
		1965-66..... \$ 672,991		
		1966-67..... 497,401		
		1967-68 (estimated)..... 884,000		
		MINES, MINERALS, ENERGY AND GEOSCIENCES		
		Vote 15—Administration, Operation and Maintenance including the administration of the Explosives Act, the purchase of air photography, the expenses of the Inter-departmental Committee on Air Surveys, the National Advisory Committee on Control Surveys and Mapping, the National Advisory Committee on Research in Geological Sciences, the National Advisory Committee on Research in Mining and Mineral Processing, the Canadian Permanent Committee on Geographical Names, the National Committee for Canada of the International Astronomical Union and authority to make recoverable advances not exceeding the amount of the share of the United States Government of the cost of binding annual reports and maintaining boundary range lights		
		ENERGY DEVELOPMENT		
		Salaried Positions:		
		Executive, Scientific and Professional:		
		Senior Officer 3 (\$20,500-\$25,750)		
		Senior Officer 2 (\$18,500-\$23,500)		
		(\$16,000-\$18,000)		
		Administrative Support:		
		(\$4,000-\$6,000)		
1				
4				
4				
5				
14				
(14)				
		Salaries..... (1)	198,700	
		Travelling and Removal Expenses..... (2)	38,200	
		Telephones and Telegrams..... (2)	2,000	
		Publication of Departmental Reports..... (3)	12,000	
		Professional and Special Services..... (4)	28,000	
		Office Stationery, Supplies and Equipment..... (7)	15,000	
		Sundries..... (12)	500	
			294,400	

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		MINERAL DEVELOPMENT—OFFICE OF THE ASSISTANT DEPUTY MINISTER, MINERAL DEVELOPMENT, IN- CLUDING THE OPERATION OF THE QUEBEC OFFICE		
		Salaried Positions:		
		Executive, Scientific and Professional:		
		Senior Officer 3 (\$20,500-\$25,750)		
1	1	(\$16,000-\$18,000)		
1	1	Technical, Operational and Service:		
		(\$4,000-\$6,000)		
1	1	Administrative Support:		
		(\$6,000-\$8,000)		
1	2	(\$4,000-\$6,000)		
1	1	(Under \$4,000)		
6	6			
(6)	(6)			
		Salaries.....(1)	63,900	58,650
		Travelling and Removal Expenses.....(2)	3,300	1,750
		Telephones and Telegrams.....(2)	1,200	1,100
		Office Stationery, Supplies and Equipment.....(7)	300	
		Sundries.....(12)	500	200
			69,200	61,700
		Expenditure		
		1965-66.....\$.....		
		1966-67.....		
		1967-68 (estimated).....63,500		
		MINERAL DEVELOPMENT—EXPLOSIVES DIVISION		
		Salaried Positions:		
		Executive, Scientific and Professional:		
		(\$16,000-\$18,000)		
1	1	(\$14,000-\$16,000)		
3	2	(\$12,000-\$14,000)		
2	1	(\$10,000-\$12,000)		
1	3	(\$8,000-\$10,000)		
		Administrative and Foreign Service:		
1		(\$8,000-\$10,000)		
		Administrative Support:		
1		(\$6,000-\$8,000)		
4	4	(\$4,000-\$6,000)		
4	5	(Under \$4,000)		
17	16			
(17)	(16)			
		Salaries.....(1)	133,200	118,200
		Travelling and Removal Expenses.....(2)	16,100	12,600
		Freight, Express and Cartage.....(2)	100	100
		Telephones and Telegrams.....(2)	800	700
		Publication of Technical Reports.....(3)	2,500	2,000
		Professional and Special Services.....(4)	1,500	1,300
		Repairs and Upkeep of Equipment.....(6)	3,000	700

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		MINERAL DEVELOPMENT—EXPLOSIVES DIVISION (Continued)		
		Office Stationery, Supplies and Equipment.....(7)	1,000	1,200
		Materials and Supplies.....(7)	1,400	
		Sundries.....(12)	100	100
			159,700	136,900
		Expenditure Revenue		
		1965-66.....\$ 113,910 \$ 8,096		
		1966-67.....124,096 8,000		
		1967-68 (estimated).....140,000 9,000		
		MINERAL DEVELOPMENT—MINERAL RESOURCES DIVISION		
		Salaried Positions:		
		Executive, Scientific and Professional:		
		Senior Officer 1 (\$16,500-\$21,250)		
1		(\$18,000-\$21,000)		
1	2	(\$16,000-\$18,000)		
2	8	(\$14,000-\$16,000)		
6	6	(\$12,000-\$14,000)		
6	15	(\$10,000-\$12,000)		
20	6	(\$ 8,000-\$10,000)		
1		Administrative and Foreign Service:		
1		(\$16,000-\$18,000)		
1		(\$14,000-\$16,000)		
	1	(\$12,000-\$14,000)		
1		(\$10,000-\$12,000)		
1		(\$ 8,000-\$10,000)		
1	1	(\$ 6,000-\$ 8,000)		
		Technical, Operational and Service:		
1		(\$12,000-\$14,000)		
1	2	(\$10,000-\$12,000)		
3	3	(\$ 8,000-\$10,000)		
5	5	(\$ 6,000-\$ 8,000)		
1	2	(\$ 4,000-\$ 6,000)		
		Administrative Support:		
5		(\$ 6,000-\$ 8,000)		
15	21	(\$ 4,000-\$ 6,000)		
12	10	(Under \$4,000)		
85	82			
(85)	(82)	Continuing Establishment.....	774,100	704,500
(1)	(1)	Casuals and Others.....	22,400	17,300
(86)	(83)	Salaries and Wages.....(1)	796,500	721,800
		Overtime.....(1)	500	500
		Travelling and Removal Expenses.....(2)	60,100	53,100
		Freight, Express and Cartage.....(2)	300	200
		Telephones and Telegrams.....(2)	8,500	6,100
		Publication of Technical Reports.....(3)	45,000	40,100
		Exhibits, Advertising, Films, Broadcasting and Displays.....(3)	4,700	13,500
		Professional and Special Services.....(4)	102,000	102,000

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		MINERAL DEVELOPMENT—MINERAL RESOURCES DIVISION (Continued)		
		Repairs and Upkeep of Equipment..... (6)	800	400
		Office Stationery, Supplies and Equipment..... (7)	4,400	11,300
		Materials and Supplies..... (7)	18,900	4,100
		Sundries..... (12)	1,700	900
			1,041,400	954,000
		Expenditure Revenue		
		1965-66..... \$ 672,991 \$ 18,968		
		1966-67..... 593,902 423,000		
		1967-68 (estimated)..... 954,000 435,000		
		OFFICE OF THE ASSISTANT DEPUTY MINISTER, MINES AND GEOSCIENCES		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1	1	Senior Officer 3 (\$20,500-\$25,750)		
2	1	(\$16,000-\$18,000)		
	1	(\$14,000-\$16,000)		
		Administrative Support:		
1		(\$6,000-\$8,000)		
3	2	(\$4,000-\$6,000)		
7	5			
(7)	(5)			
		Salaries..... (1)	78,500	69,185
		Travelling and Removal Expenses..... (2)	10,900	10,720
		Telephones and Telegrams..... 2	400	416
		Office Stationery, Supplies and Equipment..... (7)	1,600	2,150
		Sundries..... (12)	500	150
			92,100	82,615
		Expenditure		
		1965-66..... \$		
		1966-67.....		
		1967-68 (estimated)..... 82,000		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING		
		Branch Administration		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1	1	Senior Officer 2 (\$18,500-\$23,500)		
3		(\$18,000-\$21,000)		
3	1	(\$16,000-\$18,000)		
1	5	(\$14,000-\$16,000)		
3	3	(\$12,000-\$14,000)		
4	1	(\$10,000-\$12,000)		
2	6	(\$8,000-\$10,000)		
	2	(\$6,000-\$8,000)		
	1	(\$4,000-\$6,000)		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERO- NAUTICAL CHARTING (Continued)		
		Branch Administration (Continued)		
		Salaried Positions: (Continued)		
		Administrative and Foreign Service:		
	1	(\$14,000-\$16,000)		
1	1	(\$12,000-\$14,000)		
1		(\$10,000-\$12,000)		
2		(\$8,000-\$10,000)		
	1	(\$6,000-\$8,000)		
1	2	(\$4,000-\$6,000)		
		Technical, Operational and Service:		
1		(\$10,000-\$12,000)		
3	5	(\$8,000-\$10,000)		
10	10	(\$6,000-\$8,000)		
20	22	(\$4,000-\$6,000)		
3	2	(Under \$4,000)		
		Administrative Support:		
2	2	(\$6,000-\$8,000)		
21	14	(\$4,000-\$6,000)		
17	18	(Under \$4,000)		
1	1	Prevailing Rate Positions: (Full Time)		
100	99	Continuing Establishment.....	880,000	587,800
(100)	(99)	Casuals and Others.....	7,000	7,000
(4)	(4)			
(104)	(103)	Salaries and Wages.....(1)	887,000	594,800
		Overtime.....(1)	100	1,500
		Travelling Expenses—Field.....(2)	5,000	3,000
		Travelling and Removal Expenses.....(2)	16,200	13,400
		Freight, Express and Cartage.....(2)	6,200	
		Telephones and Telegrams.....(2)	8,200	10,500
		Travelling Expenses of Members of the National Advisory Committee on Control Surveys and Mapping.....(2)	1,000	4,000
		Travelling Expenses of Members of the Canadian Permanent Committee on Geographical Names.....(2)		1,000
		Publication of Technical Reports.....(3)	38,500	37,500
		Films.....(4)	7,000	9,000
		Other Professional and Special Services.....(4)	133,000	37,000
		Rental of Equipment.....(5)	15,500	5,000
		Repairs and Upkeep of Motor Vehicles.....(6)	2,700	1,600
		Office Stationery, Supplies and Equipment.....(7)	26,200	39,200
		Materials and Supplies.....(7)	48,100	19,100
		Sundries.....(12)	10,700	16,800
			1,205,400	793,400
		Expenditure Revenue		
		1965-66 \$ 472,923 \$ 539,341		
		1966-67 576,404 601,000		
		1967-68 (estimated) 793,200 620,000		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING (Continued)		
		Geodetic Survey of Canada		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1		(\$18,000-\$21,000)		
1	1	(\$16,000-\$18,000)		
2	2	(\$14,000-\$16,000)		
3	5	(\$12,000-\$14,000)		
14	11	(\$10,000-\$12,000)		
9	11	(\$8,000-\$10,000)		
9	9	(\$6,000-\$8,000)		
		Administrative and Foreign Service:		
1	1	(\$6,000-\$8,000)		
		Technical, Operational and Service:		
	1	(\$8,000-\$10,000)		
4	3	(\$6,000-\$8,000)		
7	8	(\$4,000-\$6,000)		
		Administrative Support:		
4	2	(\$4,000-\$6,000)		
3	4	(Under \$4,000)		
68	68	Prevailing Rate Positions: (Seasonal)		
126	126	Continuing Establishment.....	607,400	582,300
(80)	(80)	Casuals and Others.....	142,700	112,000
(32)	(32)			
(112)	(112)	Salaries and Wages.....(1)	750,100	694,300
		Overtime.....(1)	75,000	41,000
		Allowances.....(1)	11,300	15,000
		Unemployment Insurance Contributions.....(1)	1,000	900
		Travelling Expenses—Field.....(2)	90,300	59,000
		Travelling and Removal Expenses—Other.....(2)	7,500	6,000
		Freight, Express and Cartage.....(2)	7,900	29,000
		Postage.....(2)	100	
		Telephones and Telegrams.....(2)	6,600	2,700
		Publication of Technical Reports.....(3)	5,000	1,900
		Professional and Special Services.....(4)	1,000	
		Rental of Land.....(5)	10,400	5,000
		Repairs and Upkeep of Equipment.....(6)	29,300	32,500
		Charter of Aircraft and Rental of Other Equipment... (6)	149,500	227,000
		Office Stationery, Supplies and Equipment.....(7)	19,200	6,000
		Materials and Supplies.....(7)	89,900	99,000
		Sundries.....(12)	300	900
			1,254,400	1,220,200
		Expenditure		
		1965-66.....\$ 1,008,715		
		1966-67.....1,080,289		
		1967-68 (estimated).....1,220,200		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERO- NAUTICAL CHARTING (Continued)		
		International Boundary Commission including authority to make recoverable advances in amounts not exceeding in the aggregate the amount of the share of the United States Government of binding Annual Reports and maintaining Boundary Range Lights		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1		(\$16,000-\$18,000)		
	1	(\$14,000-\$16,000)		
1	1	(\$12,000-\$14,000)		
	2	(\$ 8,000-\$10,000)		
1		(\$ 6,000-\$ 8,000)		
		Technical, Operational and Service:		
1		(\$ 8,000-\$10,000)		
1	1	(\$ 6,000-\$ 8,000)		
		Administrative Support:		
1		(\$ 4,000-\$ 6,000)		
	1	(Under \$ 4,000)		
20	20	Prevailing Rate Positions: (Seasonal)		
26	26			
(13)	(13)	Continuing Establishment.....	81,400	83,400
(1)	(1)	Casuals and Others.....	4,100	3,600
(14)	(14)	Salaries and Wages.....(1)	85,500	87,000
		Overtime.....(1)	1,200	1,400
		Allowances.....(1)	1,000	1,000
		Unemployment Insurance Contributions.....(1)	200	200
		Travelling Expenses—Field.....(2)	2,400	4,000
		Travelling and Removal Expenses—Other.....(2)	2,400	1,300
		Freight, Express and Cartage.....(2)	500	500
		Telephones and Telegrams.....(2)	400	500
		Publication of Technical Reports.....(3)	600	600
		Charter of Aircraft and Rental of Other Equipment.....(5)	6,500	8,100
		Rental of Buildings and Land.....(5)	200	200
		Repairs and Upkeep of Equipment.....(6)	6,200	5,500
		Office Stationery, Supplies and Equipment.....(7)	400	300
		Materials and Supplies.....(7)	17,400	10,700
		Sundries.....(12)	300	400
			125,200	121,700
		Less—Amount recoverable from United States Government.....(13)	1,700	800
			123,500	120,900
		Expenditure		
		1965-66.....\$ 109,966		
		1966-67.....113,922		
		1967-68 (estimated).....120,900		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAU- TICAL CHARTING (Continued)		
		Topographical Surveys		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1		(\$18,000-\$21,000)		
	1	(\$16,000-\$18,000)		
3	3	(\$14,000-\$16,000)		
4	6	(\$12,000-\$14,000)		
24	8	(\$10,000-\$12,000)		
14	24	(\$8,000-\$10,000)		
16	4	(\$6,000-\$8,000)		
		Administrative and Foreign Service:		
1		(\$8,000-\$10,000)		
	3	(\$6,000-\$8,000)		
		Technical, Operational and Service:		
2		(\$10,000-\$12,000)		
39	22	(\$8,000-\$10,000)		
81	126	(\$6,000-\$8,000)		
56	62	(\$4,000-\$6,000)		
27	9	(Under \$4,000)		
		Administrative Support:		
5	4	(\$4,000-\$6,000)		
4	5	(Under \$4,000)		
43	43	Prevailing Rate Positions: (Seasonal)		
320	320	Continuing Establishment.....	1,993,100	1,957,000
(291)	(291)	Casuals and Others.....	74,400	87,900
(22)	(22)			
(313)	(313)	Salaries and Wages.....(1)	2,067,500	2,044,900
		Overtime.....(1)	23,000	19,500
		Allowances.....(1)	15,300	22,000
		Unemployment Insurance Contributions.....(1)	1,100	1,300
		Travelling Expenses—Field.....(2)	74,600	68,700
		Travelling and Removal Expenses—Other.....(2)	11,300	6,500
		Freight, Express and Cartage.....(2)	5,600	4,700
		Postage.....(2)	200	
		Telephones, Telegrams and Cables.....(2)	15,000	7,600
		Publication of Technical Reports.....(3)	4,500	3,500
		Exhibits, Advertising, Broadcasting and Displays... (3)	500	2,000
		Professional and Special Services.....(4)	210,000	201,500
		Rental of Buildings and Land.....(5)	1,900	1,800
		Charter of Aircraft and Rental of Other Equipment. (5)	364,400	280,500
		Repairs and Upkeep of Equipment.....(6)	53,200	76,000
		Office Stationery, Supplies and Equipment.....(7)	45,000	34,600
		Materials and Supplies.....(7)	101,800	73,200
		Sundries.....(12)	6,800	8,600
			3,001,700	2,851,900
		Expenditure		
		1965-66.....\$ 2,273,975		
		1966-67.....2,360,784		
		1967-68 (estimated).....2,851,900		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING (Continued)		
		Legal Surveys and Aeronautical Charts		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1		(\$18,000-\$21,000)		
1	2	(\$16,000-\$18,000)		
1	1	(\$14,000-\$16,000)		
4	3	(\$12,000-\$14,000)		
5	2	(\$10,000-\$12,000)		
23	20	(\$8,000-\$10,000)		
2	8	(\$6,000-\$8,000)		
		Administrative and Foreign Service:		
1		(\$8,000-\$10,000)		
	1	(\$6,000-\$8,000)		
		Technical, Operational and Service:		
1	1	(\$12,000-\$14,000)		
9	6	(\$8,000-\$10,000)		
47	64	(\$6,000-\$8,000)		
20	11	(\$4,000-\$6,000)		
8	3	(Under \$4,000)		
		Administrative Support:		
	1	(\$6,000-\$8,000)		
6	6	(\$4,000-\$6,000)		
3	4	(Under \$4,000)		
		Prevailing Rate Positions:		
67	67	(Seasonal)		
199	200	Continuing Establishment.....	1,022,900	969,200
(154)	(155)	Casuals and Others.....	45,000	47,400
(9)	(9)			
(163)	(164)	Salaries and Wages..... (1)	1,067,900	1,016,600
		Overtime..... (1)	17,000	17,600
		Allowances..... (1)	16,800	16,800
		Unemployment Insurance Contributions..... (1)	500	500
		Travelling Expenses—Field..... (2)	71,000	72,000
		Travelling and Removal Expenses—Other..... (2)	8,800	5,500
		Freight, Express and Cartage..... (2)	2,300	2,500
		Telephones and Telegrams..... (2)	6,600	5,000
		Publication of Technical Reports..... (3)	40,300	15,900
		Professional and Special Services..... (4)	165,800	173,000
		Charter of Aircraft and Rental of Other Equipment.. (5)	10,200	9,000
		Repairs and Upkeep of Equipment..... (6)	10,600	10,300
		Office Stationery, Supplies and Equipment..... (7)	8,700	6,200
		Materials and Supplies..... (7)	16,600	16,200
		Sundries..... (12)	1,400	2,300
			1,444,500	1,369,400
		Expenditure		
		1965-66..... \$ 1,002,521		
		1966-67..... 1,141,192		
		1967-68 (estimated)..... 1,369,400		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING (Continued)		
		Provincial and Territorial Boundary Surveys		
		Travelling Expenses—Field.....(2)	800	500
		Freight, Express and Cartage.....(2)	500	300
		Professional, Technical and Other Assistance.....(4)	9,700	6,500
		Charter of Aircraft.....(5)		300
		Rental of Other Equipment.....(5)	400	
		Materials and Supplies.....(7)	3,300	1,800
		Sundries.....(12)	300	200
			15,000	9,600
		(Further Details)		
		Manitoba-Saskatchewan Boundary Survey.....	10,000	9,600
		British Columbia-Yukon-Northwest Territory Bound- ary Survey.....	5,000	
			15,000	9,600
		Expenditure		
		1965-66.....\$ 14,510		
		1966-67.....8,807		
		1967-78 (estimated).....9,600		
		Map Compilation and Reproduction		
		Salaried Positions:		
		Executive, Scientific and Professional:		
		(\$18,000-\$21,000)		
1		(\$16,000-\$18,000)		
1	1	(\$14,000-\$16,000)		
		Administrative and Foreign Service:		
1	1	(\$8,000-\$10,000)		
2		(\$6,000-\$8,000)		
		Technical, Operational and Service:		
7	2	(\$10,000-\$12,000)		
34	14	(\$8,000-\$10,000)		
114	130	(\$6,000-\$8,000)		
57	81	(\$4,000-\$6,000)		
37	16	(Under \$4,000)		
		Administrative Support:		
1		(\$6,000-\$8,000)		
7	6	(\$4,000-\$6,000)		
4	6	(Under \$4,000)		
266	258			
(266)	(258)			
	(1)	Continuing Establishment.....	1,678,200	1,743,000
		Casuals and Others.....		3,600
(266)	(259)	Salaries and Wages.....(1)	1,678,200	1,746,600
		Overtime.....(1)	2,800	4,700

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAU- TICAL CHARTING (Continued)		
		Map Compilation and Reproduction (Continued)		
		Travelling and Removal Expenses—Other.....(2)	5,000	5,000
		Freight, Express and Cartage.....(2)	1,000	2,000
		Telephones and Telegrams.....(2)	7,200	6,000
		Repairs and Upkeep of Buildings and Works.....(6)	500	500
		Repairs and Upkeep of Equipment.....(6)	25,000	30,000
		Office Stationery, Supplies and Equipment.....(7)	12,000	19,700
		Materials and Supplies.....(7)	507,000	397,000
		Sundries.....(12)	7,000	7,000
			2,245,200	2,218,500
		Expenditure		
		1965-66.....\$ 1,930,375		
		1966-67.....1,956,887		
		1967-68 (estimated).....2,218,500		
		Air Photo Production Unit		
		Salaried Positions:		
		Technical, Operational and Service:		
1	1	(\$10,000-\$12,000)		
2	1	(\$8,000-\$10,000)		
16	13	(\$6,000-\$8,000)		
45	43	(\$4,000-\$6,000)		
	7	(Under \$4,000)		
		Administrative Support:		
3	2	(\$4,000-\$6,000)		
1	1	(Under \$4,000)		
		Prevailing Rate Positions:		
1	1	(Full Time)		
69	69	Salaries and Wages.....(1)	384,700	401,000
(69)	(69)	Overtime.....(1)	900	1,000
		Travelling and Removal Expenses.....(2)	900	1,100
		Freight, Express and Cartage.....(2)	900	1,000
		Telephones and Telegrams.....(2)	1,600	2,000
		Rental of Buildings.....(5)	11,600	11,600
		Repairs and Upkeep of Equipment.....(5)	8,800	9,000
		Repairs and Upkeep of Buildings and Works.....(6)	3,000	7,000
		Office Stationery, Supplies and Equipment.....(7)	5,100	6,000
		Materials and Supplies.....(7)	297,700	266,300
		Sundries.....(12)	2,200	2,500
			717,400	708,500
		Expenditure		
		1965-66.....\$ 457,373		
		1966-67.....579,347		
		1967-68 (estimated).....708,500		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING (Continued)		
		Atlas of Canada		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1	1	(\$16,000-\$18,000)		
2	2	(\$14,000-\$16,000)		
4	2	(\$12,000-\$14,000)		
3	2	(\$10,000-\$12,000)		
5	4	(\$8,000-\$10,000)		
		(\$6,000-\$8,000)		
1		Administrative and Foreign Service:		
		(\$4,000-\$6,000)		
3	1	Technical, Operational and Service:		
11	12	(\$8,000-\$10,000)		
7	10	(\$6,000-\$8,000)		
	1	(\$4,000-\$6,000)		
		(Under \$4,000)		
	1	Administrative Support:		
1		(\$4,000-\$6,000)		
		(Under \$4,000)		
38	36			
(38)	(36)	Continuing Establishment.....	261,800	260,400
(3)	(3)	Casuals and Others.....	21,000	21,000
(41)	(39)			
		Salaries and Wages..... (1)	282,800	281,400
		Overtime..... (1)		1,000
		Travelling and Removal Expenses—Other..... (2)	6,000	4,000
		Telephones and Telegrams..... (2)	3,000	3,000
		Publication of Technical Reports..... (3)	55,000	
		Professional and Special Services..... (4)	1,000	800
		Repairs and Upkeep of Equipment..... (6)	1,000	
		Office Stationery, Supplies and Equipment..... (7)	1,000	10,000
		Materials and Supplies..... (7)	50,000	20,800
		Sundries..... (12)	4,000	
			403,800	321,000
		Expenditure		
		1965-66..... \$ 279,000		
		1966-67..... 298,000		
		1967-68 (estimated)..... 321,000		
		Purchases of Air Photography and the expenses of the Interdepartmental Committee on Air Surveys... (7)	686,000	600,000
		Expenditure		
		1965-66..... \$ 432,002		
		1966-67..... 562,398		
		1967-68 (estimated)..... 600,000		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		GEOLOGICAL RESEARCH—ADMINISTRATION, OPERATION AND MAINTENANCE INCLUDING THE EXPENSES OF THE NATIONAL ADVISORY COMMITTEE ON RESEARCH IN GEOLOGICAL SCIENCES		
		Salaried Positions:		
		Executive, Scientific and Professional:		
		Senior Officer 2 (\$18,500-\$23,500)		
		Senior Officer 1 (\$16,500-\$21,250)		
		(\$18,000-\$21,000)		
1	1			
1	1			
12				
24	12			
54	82			
36	26			
68	40			
31	45			
17	20			
		Administrative and Foreign Service:		
		(\$12,000-\$14,000)		
1	1			
1	1			
6	2			
2	4			
		Technical, Operational and Service:		
		(\$10,000-\$12,000)		
3	1			
24	10			
95	114			
63	61			
9	18			
		Administrative Support:		
		(\$6,000-\$8,000)		
6	2			
49	47			
34	37			
		(Under \$4,000)		
		Prevailing Rate Positions:		
		(Full Time)		
2	2			
54	54	(Seasonal)		
593	580			
(557)	(544)	Continuing Establishment.....	4,818,800	4,666,700
(102)	(107)	Casuals and Others.....	575,600	496,800
(659)	(651)	Salaries and Wages.....(1)	5,394,400	5,163,500
		Overtime.....(1)	173,000	137,100
		Allowances.....(1)	38,000	37,500
		Unemployment Insurance Contributions.....(1)	400	400
		Travelling Expenses—Field.....(2)	400,000	330,000
		Travelling and Removal Expenses—Other.....(2)	69,000	74,000
		Freight, Express and Cartage.....(2)	66,000	60,000
		Telephones and Telegrams.....(2)	35,000	36,000
		Travelling Expenses of Members of the National Advisory Committee on Research in Geological Sciences.....(2)	12,000	3,600
		Publication of Technical Reports.....(3)	97,000	90,000
		Professional and Special Services.....(4)	1,856,000	1,672,200
		Rental of Buildings and Land.....(5)	.....	1,000
		Charter of Aircraft and Rental of Other Equipment.....(5)	965,000	667,900

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		GEOLOGICAL RESEARCH (Continued)		
		Repairs and Upkeep of Equipment.....(6)	152,000	85,000
		Office Stationery, Supplies and Equipment.....(7)	170,000	136,000
		Materials and Supplies.....(7)	497,000	345,000
		Sundries.....(12)	1,600	20,300
			9,926,400	8,859,500
		Expenditure		
		1965-66..... \$ 7,153,280		
		1966-67..... 7,518,869		
		1967-68 (estimated)..... 8,850,000		
		MINING AND METALLURGICAL INVESTIGATIONS AND RESEARCH		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1	1	Senior Officer 2 (\$18,500-\$23,500)		
1	1	Senior Officer 1 (\$16,500-\$21,250)		
11		(\$18,000-\$21,000)		
32	3	(\$16,000-\$18,000)		
50	99	(\$14,000-\$16,000)		
63	53	(\$12,000-\$14,000)		
62	31	(\$10,000-\$12,000)		
39	68	(\$8,000-\$10,000)		
14	21	(\$6,000-\$8,000)		
		Administrative and Foreign Service:		
8	2	(\$8,000-\$10,000)		
3	6	(\$6,000-\$8,000)		
	2	(\$4,000-\$6,000)		
		Technical, Operational and Service:		
1		(\$14,000-\$16,000)		
1		(\$12,000-\$14,000)		
2	2	(\$10,000-\$12,000)		
25	7	(\$8,000-\$10,000)		
150	125	(\$6,000-\$8,000)		
104	134	(\$4,000-\$6,000)		
10	12	(Under \$4,000)		
		Administrative Support:		
5	1	(\$6,000-\$8,000)		
47	53	(\$4,000-\$6,000)		
24	21	(Under \$4,000)		
		Prevailing Rate Positions:		
		(Full Time)		
714	702	Continuing Establishment.....	6,351,500	5,771,700
(714)	(702)	Casuals and Others.....	80,000	123,600
(16)	(16)			
(730)	(718)	Salaries and Wages.....(1)	6,431,500	5,895,300
		Overtime.....(1)	16,000	14,400
		Travelling and Removal Expenses.....(2)	156,000	125,000
		Freight, Express and Cartage.....(2)	7,400	7,500
		Telephones and Telegrams.....(2)	43,300	35,000
		Publication of Technical Reports.....(3)	36,400	35,000

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		MINING AND METALLURGICAL INVESTIGATIONS AND RESEARCH (Continued)		
		Films.....(4)	2,000	9,000
		Professional and Special Services.....(4)	258,400	131,900
		Rental of Office Machinery and Equipment.....(5)	2,600	
		Rental of Laboratory and Office Space.....(5)	15,400	15,000
		Repairs and Upkeep of Equipment.....(6)	71,300	69,600
		Office Stationery, Supplies and Equipment.....(7)	72,200	76,000
		Materials and Supplies.....(7)	448,200	362,400
		Sundries.....(12)	9,800	14,900
			7,570,500	6,791,000
		Expenditure Revenue		
		1965-66.....\$ 5,791,338 \$ 8,748		
		1966-67.....6,185,291 7,795		
		1967-68 (estimated).....6,791,000 11,000		
		RESEARCH IN ASTRONOMY AND GEOPHYSICS		
		Dominion Observatory, Ottawa and Field Stations		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1	1	Senior Officer 2 (\$18,500-\$23,500)		
4		(\$18,000-\$21,000)		
4	5	(\$16,000-\$18,000)		
6	12	(\$14,000-\$16,000)		
22	10	(\$12,000-\$14,000)		
23	17	(\$10,000-\$12,000)		
21	27	(\$8,000-\$10,000)		
8	18	(\$6,000-\$8,000)		
		Administrative and Foreign Service:		
1		(\$10,000-\$12,000)		
1	1	(\$6,000-\$8,000)		
		Technical, Operational and Service:		
1		(\$10,000-\$12,000)		
7	1	(\$8,000-\$10,000)		
43	32	(\$6,000-\$8,000)		
17	27	(\$4,000-\$6,000)		
	1	(Under \$4,000)		
2	2	(Part Time)		
	1	(Seasonal)		
		Administrative Support:		
2		(\$6,000-\$8,000)		
19	16	(\$4,000-\$6,000)		
2	4	(Under \$4,000)		
1		(Seasonal)		
		Prevailing Rates Positions:		
1	1	(Full Time)		
15	6	(Seasonal)		
201	182			

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		RESEARCH IN ASTRONOMY AND GEOPHYSICS (Continued)		
		Dominion Observatory, Ottawa (Continued)		
(189)	(176)	Continuing Establishment.....	1,686,300	1,381,800
(13)	(13)	Casuals and Others.....	85,200	97,600
(202)	(189)	Salaries and Wages.....(1)	1,771,500	1,479,400
		Overtime.....(1)	20,000	
		Allowances.....(1)	16,000	
		Travelling Expenses—Field.....(2)	135,000	108,000
		Travelling and Removal Expenses—Other.....(2)	63,000	80,300
		Freight, Express and Cartage.....(2)	44,000	46,700
		Telephones and Telegrams.....(2)	19,000	33,600
		Travelling Expenses of Members of the National Committee for Canada of the International Astronomical Union.....(2)	1,000	3,000
		Publication of Technical Reports.....(3)	44,000	41,000
		Exhibits, Advertising, Broadcasting and Displays... (3)	3,000	2,000
		Professional and Special Services.....(4)	344,000	282,000
		Rental of Buildings and Works.....(5)	2,000	700
		Charter of Aircraft and Rental of Other Equipment... (5)	386,000	193,200
		Repairs and Upkeep of Buildings and Works.....(6)	29,000	22,500
		Repairs and Upkeep of Equipment.....(6)	72,000	58,700
		Office Stationery, Supplies and Equipment.....(7)	56,000	84,600
		Materials and Supplies.....(7)	269,000	240,400
		Supply of Electricity.....(7)	27,000	24,000
		Sundries.....(12)	4,000	10,900
			3,305,500	2,711,000
		Expenditure		
		1965-66.....\$ 2,111,250		
		1966-67.....2,275,585		
		1967-68 (estimated).....2,773,000		
		Dominion Astrophysical Observatory, Victoria, B.C. —Administration, Operation and Maintenance		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1		(\$18,000-\$21,000)		
2	1	(\$16,000-\$18,000)		
2	3	(\$14,000-\$16,000)		
1		(\$12,000-\$14,000)		
4	2	(\$10,000-\$12,000)		
5	6	(\$8,000-\$10,000)		
	4	(\$6,000-\$8,000)		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		RESEARCH IN ASTRONOMY AND GEOPHYSICS (Continued)		
		Dominion Astrophysical Observatory, Victoria, B.C. (Continued)		
		Salaried Positions: (Continued)		
		Technical, Operational and Service:		
4	1	(\$8,000-\$10,000)		
10	6	(\$8,000-\$8,000)		
3	8	(\$4,000-\$6,000)		
1	1	(Under \$4,000)		
1	1	(Seasonal)		
		Administrative Support:		
2	2	(\$4,000-\$6,000)		
1	1	(Under \$4,000)		
2	2	Prevailing Rate Positions: (Full Time)		
39	38	Continuing Establishment.....	318,500	299,300
(39)	(38)	Casuals and Others.....	15,300	4,500
(2)	(2)			
(41)	(40)	Salaries and Wages.....(1)	333,800	303,800
		Overtime.....(1)		1,000
		Travelling Expenses—Field.....(2)	4,000	3,400
		Travelling and Removal Expenses—Other.....(2)	19,000	25,300
		Freight, Express and Cartage.....(2)	3,000	3,500
		Postage.....(2)	2,000	
		Telephones and Telegrams.....(2)	3,000	4,400
		Publication of Technical Reports.....(3)	11,000	10,000
		Professional and Special Services.....(4)	46,000	4,400
		Rental of Equipment.....(5)	2,000	
		Repairs and Upkeep of Buildings and Works.....(6)	19,000	27,000
		Repairs and Upkeep of Equipment.....(6)	7,000	5,400
		Office Stationery, Supplies and Equipment.....(7)	5,000	14,000
		Materials and Supplies.....(7)	33,000	25,000
		Water and Electricity.....(7)	11,000	18,500
		Sundries.....(12)	3,000	3,300
			501,800	449,000
		Expenditure		
		1965-66.....\$ 268,896		
		1966-67.....324,116		
		1967-68 (estimated).....477,000		
		POLAR CONTINENTAL SHELF PROJECT		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1		(\$18,000-\$21,000)		
2	1	(\$14,000-\$16,000)		
1		(\$12,000-\$14,000)		
2	1	(\$10,000-\$12,000)		
	1	(\$8,000-\$10,000)		
	1	(\$6,000-\$8,000)		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 15 (Continued)		
		POLAR CONTINENTAL SHELF PROJECT (Continued)		
		Salaried Positions: (Continued)		
		Administrative and Foreign Service:		
		(\$8,000-\$10,000)		
1	1	Technical, Operational and Service:		
		(\$8,000-\$10,000)		
5	1	(\$6,000-\$8,000)		
3	8	(\$4,000-\$6,000)		
3	3	(Seasonal)		
		Administrative Support:		
3	2	(\$4,000-\$6,000)		
1	2	(Under \$4,000)		
		Prevailing Rate Positions:		
1	1	(Full Time)		
12	12	(Seasonal)		
35	35			
(28)	(28)	Continuing Establishment.....	198,300	210,000
(1)	(1)	Casuals and Others.....	5,500	5,000
(29)	(29)	Salaries and Wages.....(1)	203,800	215,000
		Overtime.....(1)		10,000
		Allowances.....(1)		7,000
		Travelling Expenses—Field.....(2)	40,000	28,000
		Travelling and Removal Expenses—Other.....(2)	4,000	3,600
		Freight, Express and Cartage.....(2)	135,000	56,000
		Telephones and Telegrams.....(2)	4,500	2,800
		Publication of Technical Reports.....(3)	1,500	500
		Professional and Special Services.....(4)	141,500	112,000
		Charter of Aircraft and Rental of Other Equipment.....(5)	980,500	873,000
		Repairs and Upkeep of Equipment.....(6)	80,000	56,000
		Office Stationery, Supplies and Equipment.....(7)	3,500	2,400
		Materials and Supplies.....(7)	226,000	267,400
		Sundries.....(12)	1,500	2,300
			1,821,800	1,636,000
		Expenditure		
		1965-66.....\$ 1,280,684		
		1966-67.....1,782,018		
		1967-68 (estimated).....1,636,000		
		Total, Vote 15.....	35,879,700	31,895,115
		Expenditure Revenue		
		1965-66.....\$ 25,373,709 \$ 575,153		
		1966-67.....27,481,907 1,044,795		
		1967-68 (estimated).....31,979,700 1,075,000		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 20—Construction or Acquisition of Buildings, Works, Land and Equipment		
		MINERAL DEVELOPMENT— EXPLOSIVES DIVISION		
		Acquisition of Equipment.....(9)	5,000	3,100
		Expenditure		
		1965-66.....\$ 2,428		
		1966-67.....1,632		
		1967-68 (estimated).....2,500		
		MINERAL DEVELOPMENT— MINERAL RESOURCES DIVISION		
		Acquisition of Equipment.....(9)		3,000
		Expenditure		
		1965-66.....\$ 2,500		
		1966-67.....		
		1967-68 (estimated).....3,000		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING		
		Branch Administration		
		Acquisition of Buildings and Works including Land..(8)		700
		Acquisition of Equipment.....(9)	59,800	51,000
			59,800	51,700
		Expenditure		
		1965-66.....\$ 1,000		
		1966-67.....18,729		
		1967-68 (estimated).....51,700		
		Geodetic Survey of Canada		
		Acquisition of Equipment.....(9)	106,900	67,500
		Expenditure		
		1965-66.....\$ 82,449		
		1966-67.....50,526		
		1967-68 (estimated).....67,000		
		International Boundary Commission		
		Acquisition of Equipment.....(9)	7,000	8,500
		Expenditure		
		1965-66.....\$ 3,202		
		1966-67.....		
		1967-68 (estimated).....8,500		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 20 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING (Continued)		
		Topographical Surveys		
		Acquisition of Equipment.....(9)	319,500	225,100
		Expenditure		
		1965-66.....\$ 159,709		
		1966-67.....185,041		
		1967-68 (estimated).....225,000		
		Air Photo Production Unit		
		Acquisition of Equipment.....(9)	50,000	47,500
		Expenditure		
		1965-66.....\$ 37,850		
		1966-67.....41,721		
		1967-68 (estimated).....47,500		
		Atlas of Canada		
		Acquisition of Equipment.....(9)	14,700	10,000
		Expenditure		
		1965-66.....\$ 3,000		
		1966-67.....11,000		
		1967-68 (estimated).....10,000		
		Legal Surveys and Aeronautical Charts		
		Acquisition of Buildings and Works including Land (8).....		2,000
		Acquisition of Equipment.....(9)	20,600	27,400
			20,600	29,400
		Expenditure		
		1965-66.....\$ 28,327		
		1966-67.....26,644		
		1967-68 (estimated).....29,400		
		Provincial and Territorial Boundary Surveys		
		Acquisition of Equipment.....(9).....		400
		Expenditure		
		1965-66.....\$.....		
		1966-67.....		
		1967-68 (estimated).....400		
		(Further Details)		
		Manitoba-Saskatchewan Boundary Survey.....		400

Positions (man-years)		Details of Services	Amount	
1963-69	1967-68		1963-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 20 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING (Continued)		
		Map Compilation and Reproduction		
		Acquisition of Equipment.....(9)	322,400	211,500
		Expenditure		
		1965-66.....\$ 131,300		
		1966-67.....146,396		
		1967-68 (estimated).....211,500		
		GEOLOGICAL RESEARCH		
		Construction or Acquisition of Buildings, Works and Land.....(8)	10,000	
		Acquisition of Equipment.....(9)	970,000	583,000
			980,000	583,000
		Expenditure		
		1965-66.....\$ 768,388		
		1966-67.....2,397,396		
		1967-68 (estimated).....662,400		
		MINING AND METALLURGICAL INVESTIGATIONS AND RESEARCH		
		Construction of Buildings and Works.....(8)	5,100	15,000
		Acquisition of Equipment.....(9)	1,001,400	671,600
			1,006,500	686,600
		Expenditure		
		1965-66.....\$ 817,792		
		1966-67.....561,765		
		1967-68 (estimated).....686,600		
		RESEARCH IN ASTRONOMY AND GEOPHYSICS		
		Dominion Observatory, Ottawa and Field Stations—Construction or Acquisition of Build- ings, Works, Land and Equipment		
		Construction or Acquisition of Buildings, Works and Land.....(8)	214,000	248,300
		Acquisition of Equipment.....(9)	864,000	824,700
			1,078,000	1,073,000
		Expenditure		
		1965-66.....\$ 692,753		
		1966-67.....957,578		
		1967-68 (estimated).....1,118,000		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 20 (Continued)		
		RESEARCH IN ASTRONOMY AND GEOPHYSICS (Continued)		
		Dominion Astrophysical Observatory, Victoria, B.C.—Construction or Acquisition of Buildings, Works, Land and Equipment		
		Queen Elizabeth II Observatory— Construction or Acquisition of Buildings, Works and Land.....(8)	240,000	990,000
		Acquisition of equipment.....(9)	54,000	542,000
		Acquisition of Other Equipment.....(9)	50,000	69,000
			344,000	1,601,000
		Expenditure		
		1965-66.....\$ 1,780,234		
		1966-67.....1,811,983		
		1967-68 (estimated).....500,000		
		POLAR CONTINENTAL SHELF PROJECT		
		Acquisition of Equipment.....(9)	215,600	155,000
		Expenditure		
		1965-66.....\$ 71,207		
		1966-67.....117,067		
		1967-68 (estimated).....155,000		
		Total, Vote 20.....	4,530,000	4,756,300
		Expenditure		
		1965-66.....\$ 4,728,546		
		1966-67.....6,327,478		
		1967-68 (estimated).....3,775,500		
		Vote 25—Grants, contributions and subventions as detailed in the Estimates, Canada's fees for membership in the International Organizations detailed in the Estimates, Canada's share of the cost of the Geological Liaison Office, British Commonwealth Scientific Conference, London, England, and Canada's share of the cost of the Commonwealth Committee on mineral pro- cessing		
		MINERAL DEVELOPMENT— MINERAL RESOURCES DIVISION		
		Grants to universities in aid of Research in Mineral Economics.....(10)	5,000	

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 25 (Continued)		
		FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING		
		Branch Administration		
		Grant to Canadian Institute of Surveying.....(10)	2,000	1,000
		Grant to National Cartographic Society.....(10)	2,000	
		Grants in aid of Surveying and Mapping Research in Canadian Universities.....(10)	25,000	20,000
		Grant to assist in defraying the expenses of special meetings of Canadian Section, Pan American Institute of Geography and History.....(10)	25,000	
			54,000	21,000
		Expenditure		
		1965-66.....\$ 7,470		
		1966-67.....13,000		
		1967-68 (estimated).....21,000		
		Geological Research		
		Grants in aid of Research in the Geological Sciences(10)	220,000	185,000
		Grants in aid of Research in Data Storage and Retrieval.....(10)	50,000	
		Grants to assist in defraying the costs of Scientific Con- ferences on the Geological Sciences.....(10)	22,000	
		Grant to Alberta Society of Petroleum Geologists..(10)		15,000
		Grant to the Canadian Committee of the Commis- sion on a World Geochronological Scale of the International Union of Geological Sciences.....(10)		5,000
		Canada's share of the cost of the Geological Liaison Office, British Commonwealth Scientific Con- ference.....(10)	5,000	5,000
		Membership, International Union of Geological Sciences.....(10)	3,000	2,000
		Other Memberships.....(10)	1,000	500
			301,000	212,500
		Expenditure		
		1965-66.....\$ 156,419		
		1966-67.....156,010		
		1967-68 (estimated).....212,500		
		MINING AND METALLURGICAL INVESTIGATIONS AND RESEARCH		
		Grants in aid of Mining and Mineral Processing Research in Canadian Universities.....(10)	100,000	100,000
		Canada's share of the cost of the Commonwealth Committee on Mineral Processing.....(10)	700	800
		Grant to the Canadian Council of the International Institute of Welding in Canada.....(10)	375	

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Vote 25 (Continued)		
		MINING AND METALLURGICAL INVESTIGATIONS AND RESEARCH (Continued)		
		Grant to the British Flame Research Committee..(10)	625	
		Library Memberships in Technical Societies.....(10)	3,300	3,600
			105,000	104,400
		Expenditure		
		1965-66..... \$ 71,956		
		1966-67..... 102,801		
		1967-68 (estimated)..... 104,000		
		RESEARCH IN ASTRONOMY AND GEOPHYSICS		
		Branch Administration		
		Membership Fee, International Astronomical Union(10)	2,000	2,000
		Grant to the Royal Astronomical Society of Canada(10)	5,000	5,000
		Grants in aid of Research in Astronomy and Geo- physics in Canadian Universities.....(10)	22,000	25,000
		Contribution to International Seismological Fund..(10)	15,000	15,000
		Grants to Dalhousie University and the University of Western Ontario for cooperative experiments in crustal seismology.....(10)	5,000	2,000
			49,000	49,000
		Expenditure		
		1965-66..... \$ 14,726		
		1966-67..... 17,115		
		1967-68 (estimated)..... 49,000		
		CONTRIBUTIONS TO THE PROVINCES, PURSUANT TO AGREEMENTS ENTERED INTO WITH THE APPROVAL OF THE GOVERNOR IN COUNCIL BY CANADA WITH THE PROVINCES, TO ASSIST IN THE DEVELOPMENT OF ROADS LEADING TO RESOURCES.....(10)	950,000	2,834,000
		Expenditure		
		1965-66..... \$ 7,265,000		
		1966-67..... 4,527,500		
		1967-68 (estimated)..... 2,834,000		
		Total, Vote 25.....	1,464,000	3,220,900
		Expenditure		
		1965-66..... \$ 9,973,219		
		1966-67..... 7,659,652		
		1967-68 (estimated)..... 6,220,500		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		MINES, MINERALS, ENERGY AND GEOSCIENCES (Continued)		
		Statutory—Payments under the Emergency Gold Mining Assistance Act (Chap. 95, R.S., as amended)..... (10)	15,600,000	14,800,000
		Expenditure		
		1965-66..... \$ 14,757,573		
		1966-67..... 14,959,891		
		1967-68 (estimated)..... 15,000,000		
		WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS		
		Vote 40—Administration, Operation and Main- tenance, including the expenses of the Sas- katchewan-Nelson Basin Board and the Atlantic Tidal Power Programming Board including the recoverable expenditures relating thereto, recoverable expenditures incurred in respect of Regional Water Resources Planning In- vestigations and Water Resources Inventories and authority to make recoverable advances in amounts not exceeding in the aggregate the amount of the shares of the Province of Manitoba and of the Province of Ontario of the cost of regulating the levels of Lake of the Woods and Lac Seul and the amount of the share of provin- cial and outside agencies of the cost of hydro- metric surveys, and the expenses of the National Advisory Committee on Geographical Research and the National Committee for Canada of the International Geographical Union		
		OFFICE OF THE ASSISTANT DEPUTY MINISTER—WATER RESOURCES		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1		Senior Officer 3 (\$20,500-\$25,750)		
1		(\$14,000-\$16,000)		
		Administrative Support:		
1		(\$4,000-\$6,000)		
3				
(3)				
		Salaries..... (1)	45,100	
		Travelling and Removal Expenses..... (2)	6,000	
		Telephones and Telegrams..... (2)	300	
		Office Stationery, Supplies and Equipment..... (7)	100	
		Sundries..... (12)	500	
			52,000	

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
A—DEPARTMENT (Continued)				
WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS (Continued)				
Vote 40 (Continued)				
MARINE SURVEYS AND RESEARCH				
Salaried Positions:				
Executive, Scientific and Professional:				
1	1	Senior Officer 2 (\$18,500-\$23,500)		
2	2	Senior Officer 1 (\$16,500-\$21,250)		
4		(\$18,000-\$21,000)		
6	5	(\$16,000-\$18,000)		
9	11	(\$14,000-\$16,000)		
21	14	(\$12,000-\$14,000)		
37	20	(\$10,000-\$12,000)		
39	46	(\$8,000-\$10,000)		
6	24	(\$6,000-\$8,000)		
	2	(\$4,000-\$6,000)		
Administrative and Foreign Service:				
1		(\$12,000-\$14,000)		
1	3	(\$10,000-\$12,000)		
15	5	(\$8,000-\$10,000)		
10	14	(\$6,000-\$8,000)		
	3	(\$4,000-\$6,000)		
Technical, Operational and Service:				
1		(\$14,000-\$16,000)		
5	2	(\$12,000-\$14,000)		
16	10	(\$10,000-\$12,000)		
92	59	(\$8,000-\$10,000)		
147	153	(\$6,000-\$8,000)		
174	175	(\$4,000-\$6,000)		
23	44	(Under \$4,000)		
Administrative Support:				
1		(\$8,000-\$10,000)		
7	3	(\$6,000-\$8,000)		
65	56	(\$4,000-\$6,000)		
43	51	(Under \$4,000)		
Prevailing Rate Positions:				
10	10	(Full Time)		
Ships' Officers and Crews:				
273	193	(Full Time)		
485	485	(Seasonal)		
1,494	1,396	Continuing Establishment.....	7,629,800	7,583,800
(1,259)	(1,161)	Casuals and Others.....	225,000	209,600
(42)	(39)			
(1,301)	(1,200)	Salaries and Wages.....(1)	7,854,800	7,793,400
		Overtime.....(1)	700,000	604,300
		Pensions, Superannuation and Other Benefits.....(1)	52,000	19,600
		Allowances.....(1)	150,000	81,700
		Travelling Expenses—Field.....(2)	336,500	248,200
		Travelling and Removal Expenses—Other.....(2)	252,400	165,300
		Freight, Express and Cartage.....(2)	65,000	46,200
		Telephones and Telegrams.....(2)	61,000	50,800
		Publication of Technical Reports.....(3)	208,000	138,500
		Professional and Special Services.....(4)	397,000	309,500
		Rental of Buildings, Works and Land.....(5)	91,000	17,900
		Charter of Aircraft, Vessels and other Equipment... (5)	964,000	820,000
		Repairs and Upkeep of Buildings and Works.....(6)	77,000	66,100
		Repairs and Upkeep of Ships and Boats.....(6)	950,000	744,600
		Repairs and Upkeep of other Equipment.....(6)	361,000	305,100

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS (Continued)		
		Vote 40 (Continued)		
		MARINE SURVEYS AND RESEARCH (Continued)		
		Office Stationery, Supplies and Equipment.....(7)	365,000	187,700
		Materials and Supplies.....(7)	2,088,000	1,899,100
		Water and Electricity.....(7)	67,000	52,500
		Sundries.....(12)	70,100	68,000
			15,109,800	13,618,500
		Expenditure Revenue		
		1965-66.....\$ 8,061,412 \$ 101,940		
		1966-67.....9,050,423 121,062		
		1967-68 (estimated).....13,618,000 110,000		
		RESEARCH AND INVESTIGATIONS ON WATER RESOURCES—INLAND WATERS		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1	1	Senior Officer 2 (\$18,500-\$23,500)		
4	3	Senior Officer 1 (\$16,500-\$21,250)		
2		(\$18,000-\$21,000)		
13	6	(\$16,000-\$18,000)		
19	31	(\$14,000-\$16,000)		
27	23	(\$12,000-\$14,000)		
73	35	(\$10,000-\$12,000)		
72	124	(\$8,000-\$10,000)		
37	23	(\$6,000-\$8,000)		
		Administrative and Foreign Service:		
2		(\$12,000-\$14,000)		
4	3	(\$10,000-\$12,000)		
11	6	(\$8,000-\$10,000)		
12	5	(\$6,000-\$8,000)		
1	7	(\$4,000-\$6,000)		
		Technical, Operational and Service:		
2	1	(\$10,000-\$12,000)		
31	8	(\$8,000-\$10,000)		
159	214	(\$6,000-\$8,000)		
152	91	(\$4,000-\$6,000)		
11	8	(Under \$4,000)		
		Administrative Support:		
5	1	(\$6,000-\$8,000)		
84	80	(\$4,000-\$6,000)		
45	46	(Under \$4,000)		
		Prevailing Rate Positions:		
10	10	(Full Time)		
777	726	Continuing Establishment.....	5,885,100	5,391,300
(777)	(726)	Casuals and Others.....	232,000	317,900
(83)	(63)			
(840)	(789)	Salaries and Wages.....(1)	6,117,100	5,709,200
		Overtime.....(1)	32,900	68,600
		Allowances.....(1)	38,000	40,300
		Unemployment Insurance Contributions.....(1)	1,000	1,000
		Travelling Expenses—Field.....(2)	328,000	378,200
		Travelling and Removal Expenses—Other.....(2)	393,300	203,900
		Freight, Express and Cartage.....(2)	63,100	45,000
		Telephones and Telegrams.....(2)	105,900	88,200

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS (Continued)		
		Vote 40 (Continued)		
		RESEARCH AND INVESTIGATIONS ON WATER RESOURCES—INLAND WATERS (Continued)		
		Publication of Technical Reports.....(3)	68,500	66,400
		Exhibits, Advertising and Displays.....(3)	1,000	12,300
		Professional and Special Services.....(4)	1,452,400	1,093,100
		Rental of Buildings and Land.....(5)	33,800	99,700
		Rental of Equipment.....(5)	441,700	350,300
		Repairs and Upkeep of Buildings and Works.....(6)	21,200	17,000
		Repairs and Upkeep of Equipment.....(6)	136,800	163,900
		Office Stationery, Supplies and Equipment.....(7)	115,800	233,200
		Materials and Supplies.....(7)	696,900	438,100
		Municipal or Public Utility Services.....(7)	55,400	33,950
		Sundries.....(12)	31,400	20,900
			10,134,200	9,063,250
		Less—Estimated amount recoverable from pro- vincial and outside agencies.....(13)	60,000	64,000
			10,074,200	8,999,250
		Expenditure Revenue		
		1965-66..... \$ 2,873,411 \$ 111,781		
		1966-67..... 4,512,420 134,581		
		1967-68 (estimated)..... 8,250,000 110,000		
		CANADA'S SHARE OF THE EXPENSES OF THE ATLANTIC TIDAL POWER PROGRAMMING BOARD INCURRED IN ACCORDANCE WITH AN AGREEMENT ENTERED INTO WITH THE APPROVAL OF THE GOVERNOR IN COUNCIL WITH THE PROVINCES OF NOVA SCOTIA AND NEW BRUNSWICK, AND RECOVERABLE EXPENDI- TURES NOT EXCEEDING IN THE AGGREGATE THE AMOUNT OF THE SHARES OF THE PROVINCES OF NOVA SCOTIA AND NEW BRUNSWICK OF THE EX- PENSES OF THE BOARD.....(12)	1,176,000	1,200,000
		Expenditure		
		1965-66..... \$.....		
		1966-67..... 23,402		
		1967-68 (estimated)..... 1,200,000		
		RESEARCH AND INVESTIGATIONS ON WATER RESOURCES— POLICY AND PLANNING		
		Salaried Positions:		
		Executive, Scientific and Professional:		
	1	Senior Officer 2 (\$18,500-\$23,500)		
		Senior Officer 1 (\$16,500-\$21,250)		
1		(\$18,000-\$21,000)		
3		(\$16,000-\$18,000)		
6	2	(\$14,000-\$16,000)		
9	2	(\$12,000-\$14,000)		
8	8	(\$10,000-\$12,000)		
15	14	(\$8,000-\$10,000)		
13	10	(\$6,000-\$8,000)		
8	4			

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS (Continued)		
		Vote 40 (Continued)		
		RESEARCH AND INVESTIGATIONS ON WATER RESOURCES— POLICY AND PLANNING (Continued)		
		Salaried Positions: (Continued)		
	2	Administrative and Foreign Service:		
		(\$12,000-\$14,000)		
1		(\$10,000-\$12,000)		
3	2	(\$8,000-\$10,000)		
	3	(\$6,000-\$8,000)		
		Technical, Operational and Service:		
2	1	(\$8,000-\$10,000)		
12	12	(\$6,000-\$8,000)		
4	2	(\$4,000-\$6,000)		
2		(Under \$4,000)		
		Administrative Support:		
22	23	(\$4,000-\$6,000)		
11	12	(Under \$4,000)		
121	98			
(121)	(98)	Continuing Establishment.....	901,900	714,200
(8)	(8)	Casuals and Others.....	56,000	50,800
(129)	(106)			
		Salaries and Wages.....(1)	957,900	765,000
		Overtime.....(1)		3,000
		Professional and Special Services.....(4)	170,000	15,800
		Travelling Expenses—Field.....(2)	9,400	12,000
		Travelling and Removal Expenses—Other.....(2)	88,100	53,900
		Travelling Expenses of the National Committee for Canada of the International Geographical Union.....(2)	2,500	3,500
		Travelling Expenses of Members of the National Advisory Committee on Geographical Research.....(2)	3,000	3,000
		Freight, Express and Cartage.....(2)	200	100
		Telephones and Telegrams.....(2)	18,300	9,300
		Publication of Reports.....(3)	38,800	16,000
		Exhibits, Advertising and Displays.....(3)		2,800
		Rental of Equipment.....(5)	600	
		Office Stationery Supplies and Equipment.....(7)	37,300	53,900
		Materials and Supplies.....(7)	20,500	400
		Repairs and Upkeep of Equipment.....(6)	400	800
		Sundries.....(12)	3,400	2,600
			1,350,400	942,100
		Expenditure		
		1965-66.....\$ 258,673		
		1966-67.....429,820		
		1967-68 (estimated).....577,500		
		CANADA'S SHARE OF THE EXPENSES OF THE SASKATCHE- WAN-NELSON BASIN BOARD INCURRED IN ACCORD- ANCE WITH AN AGREEMENT ENTERED INTO WITH THE APPROVAL OF THE GOVERNOR IN COUNCIL WITH THE PROVINCES OF ALBERTA, SASKATCHEWAN AND MANITOBA AND RECOVERABLE EXPENDI- TURES NOT EXCEEDING IN THE AGGREGATE THE AMOUNT OF THE SHARES OF THE PROVINCES OF ALBERTA, MANITOBA AND SASKATCHEWAN OF THE EXPENSES OF THE BOARD.....(12)	1,176,000	1,200,000

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS (Continued)		
		Vote 40 (Continued)		
		CANADA'S SHARE OF THE COST OF REGIONAL WATER RESOURCE PLANNING INVESTIGATIONS UNDER JOINT FEDERAL-PROVINCIAL AGREEMENTS AND RECOVERABLE EXPENDITURES NOT EXCEEDING IN THE AGGREGATE THE AMOUNT OF THE SHARES OF THE PROVINCES OF THE COST OF THE PLANNING INVESTIGATIONS		
		British Columbia and Northern Region.....	294,000	
		Prairie Region.....	98,000	
		Central Canada.....	343,000	
		Atlantic Region.....	343,000	
		(12)	1,078,000	
		Expenditure		
		1965-66..... \$		
		1966-67.....		
		1967-68 (estimated)..... 50,000		
		CANADA'S SHARE OF THE COST OF WATER RESOURCE INVENTORIES UNDER JOINT FEDERAL-PROVINCIAL AGREEMENTS AND RECOVERABLE EXPENDITURES NOT EXCEEDING IN THE AGGREGATE THE AMOUNT OF THE SHARES OF THE PROVINCES OF THE COST OF THE INVENTORIES..... (12)	441,000	
		Total, Vote 40.....	30,457,400	25,959,850
		Expenditure Revenue		
		1965-66..... \$ 11,193,496 \$ 213,721		
		1966-67..... 14,016,065 255,643		
		1967-68 (estimated)..... 23,695,500 220,000		
		Vote 45—Construction or Acquisition of Buildings, Works, Land and Equipment including au- thority to make recoverable advances in amounts not exceeding in the aggregate the amount of the shares of provincial and outside agencies of the cost of hydrometric surveys		
		MARINE SURVEYS AND RESEARCH		
		Construction or Acquisition of Buildings, Works, and Land..... (8)	695,000	938,200
		Construction of Ships and Boats..... (9)	2,337,000	7,154,900
		Acquisition of Equipment..... (9)	2,639,100	1,786,900
		(12)	5,671,100	9,880,000
		Expenditure		
		1965-66..... \$ 3,495,577		
		1966-67..... 7,069,379		
		1967-68 (estimated)..... 8,273,000		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS (Continued)		
		Vote 45 (Continued)		
		RESEARCH AND INVESTIGATIONS ON WATER RESOURCES—INLAND WATERS		
		Travelling Expenses—Field Investigations.....(2)	12,700	32,000
		Freight, Express and Cartage.....(2)	3,300	8,000
		Rental of Equipment.....(5)	49,000	110,000
		Materials and Supplies.....(7)	89,500	180,000
		Municipal or Public Utility Services.....(7)	4,000	8,000
		Construction or Acquisition of Buildings, Works and Land.....(8)	3,355,500	2,837,900
		Acquisition of Equipment.....(9)	2,060,900	1,628,100
			5,574,900	4,804,000
		Less—Estimated amount recoverable from provin- cial and outside agencies.....(13)	47,000	170,000
			5,527,900	4,634,000
		Expenditure		
		1965-66.....\$ 631,735		
		1966-67.....1,074,962		
		1967-68 (estimated).....4,634,000		
		RESEARCH AND INVESTIGATIONS ON WATER RESOURCES—POLICY AND PLANNING		
		Acquisition of Equipment.....(8)	3,000	11,000
		Expenditure		
		1965-66.....\$ 1,000		
		1966-67.....2,000		
		1967-68 (estimated).....11,000		
		Total, Vote 45.....	11,202,000	14,525,000
		Expenditure		
		1965-66.....\$ 4,128,312		
		1966-67.....8,146,341		
		1967-68 (estimated).....12,918,000		
		Vote 50—Contributions to the Provinces towards the construction of dams and other works to assist in the conservation and control of water resources in accordance with agreements entered into be- tween Canada and the Provinces, Canada's fees for membership in the International Hydro- graphic Bureau and the International Geographi- cal Union, and grants and other contributions as detailed in the Estimates		
		MARINE SURVEYS AND RESEARCH		
		Membership, International Hydrographic Bureau...(10)	8,000	5,500
		Expenditure		
		1965-66.....\$ 4,405		
		1966-67.....4,940		
		1967-68 (estimated).....5,500		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS (Continued)		
		Vote 50 (Continued)		
		RESEARCH AND INVESTIGATIONS ON WATER RESOURCES—INLAND WATERS		
		Grants in aid of Water Research.....(10)	250,000	250,000
		Canada's share of the expenses of the International Executive Council, World Power Conference....(10)	500	350
		Membership Fees.....(10)	500	500
			251,000	250,850
		Expenditure		
		1965-66.....\$ 617		
		1966-67.....38,587		
		1967-68 (estimated).....250,850		
		RESEARCH AND INVESTIGATIONS ON WATER RESOURCES—POLICY AND PLANNING		
		Contribution to the Canadian Council of Resource Ministers in an amount equal to one third the aggregate contribution of the Provinces but not exceeding \$80,000.....	80,000	55,000
		Grants in aid of Resources Research.....	244,250	1,500
		Grants in aid of Geographical Research.....	47,000	35,000
		Membership, International Geographical Union.....	550	550
		Grant to Canadian Association of Geographers.....	6,500	750
		(10)	378,300	92,800
		Expenditure		
		1965-66.....\$ 78,919		
		1966-67.....26,290		
		1967-68 (estimated).....92,800		
		CONTRIBUTIONS TO THE PROVINCES TOWARDS THE CONSTRUCTION OF DAMS AND OTHER WORKS TO ASSIST IN THE CONSERVATION AND CONTROL OF WATER RESOURCES IN ACCORDANCE WITH AGREE- MENTS ENTERED INTO BETWEEN CANADA AND THE PROVINCES		
		Contribution to the Province of Ontario toward the cost of the Upper Thames River Conservation Authority program.....	487,000	500,000
		Contribution to the Province of Ontario towards the cost of the Ausable River Conservation Authority program.....		200,000
		Contribution to the Province of Ontario towards the cost of the Metropolitan Toronto Conservation Authority program.....	1,463,000	2,000,000
		Contribution to the Province of Ontario towards the cost of the Halton County Flood Control program.....	675,000	
		Contribution to the Province of Manitoba towards the construction of the Red River (Greater Winnipeg) Floodway.....	375,000	6,700,000

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		A—DEPARTMENT (Continued)		
		WATER AND COORDINATION OF RENEWABLE RESOURCES PROGRAMS (Continued)		
		Vote 50 (Continued)		
		CONTRIBUTIONS TO THE PROVINCES (Continued)		
		Contribution to the Province of Manitoba towards the cost of the Red River Valley Community Dyking program.....	610,000	
		Contribution to the Province of British Columbia to- wards the construction of the North and West Van- couver flood control program.....	75,000	202,000
		Contribution to the Province of British Columbia to- wards the construction of flood control works in Alberni, B.C.....	187,000	75,000
		Contribution to the Province of British Columbia to- wards the construction of flood control works on the Squamish River.....	488,000	270,000
		Contribution to the Province of British Columbia to- wards the construction of tributary diversion works on Hastings Creek in North Vancouver.....	112,000	225,000
		Miscellaneous other projects.....	780,000	
		(10)	5,252,000	10,172,000
		Expenditure		
		1965-66..... \$ 9,353,659		
		1966-67..... 9,220,926		
		1967-68 (estimated)..... 10,937,000		
		Total, Vote 50.....	5,889,300	10,521,150
		Expenditure		
		1965-66..... \$ 9,437,600		
		1966-67..... 9,290,743		
		1967-68 (estimated)..... 11,286,150		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		B—ATOMIC ENERGY CONTROL BOARD		
		Approximate Value of Major Services not included in these Estimates		
		Accommodation (provided by the Department of Public Works).....	43,000	36,400
		Accounting and cheque issue services (Comptroller of the Treasury).....	20,300	3,600
		Contributions to Superannuation Account (Treasury Board).....	21,500	14,700
		Contributions to Canada Pension Plan Account and Quebec Pension Plan Account (Treasury Board)....	2,000	1,500
		Employee surgical-medical insurance premiums (Treasury Board).....	600	1,200
			87,400	57,400
		Vote 55—Administration Expenses of the Atomic Energy Control Board		
1	1	President (\$24,250)		
		Salaried Positions:		
		Executive, Scientific and Professional:		
		(\$18,000-\$21,000)		
2	2	(\$12,000-\$14,000)		
12	8	(\$10,000-\$12,000)		
	1	Administrative and Foreign Service:		
		(\$10,000-\$12,000)		
1	1	(\$8,000-\$10,000)		
1	1	(\$6,000-\$8,000)		
		Administrative Support:		
6	5	(\$6,000-\$8,000)		
7	4	(\$4,000-\$6,000)		
	2	(Under \$4,000)		
31	25	Salaries and Wages.....(1)	318,400	254,200
(31)	(25)	Travelling Expenses.....(2)	40,000	30,000
		Postage.....(2)	700	500
		Telephones and Telegrams.....(2)	6,500	5,000
		Publication of Annual Report.....(3)	1,500	2,000
		Professional and Special Services.....(4)	2,200	3,500
		Office Stationery, Supplies and Equipment.....(7)	7,500	7,500
		Expenses of Board Members.....(12)		1,200
		Sundries.....(12)	15,200	3,500
			392,000	307,400
		Expenditure		
		1965-66.....\$ 184,132		
		1966-67.....244,736		
		1967-68 (estimated).....307,000		
		Vote 60—Grants for researches and investigations with respect to atomic energy.....(10)	3,920,000	2,500,000
		Expenditure		
		1965-66.....\$ 1,600,000		
		1966-67.....2,000,000		
		1967-68 (estimated).....2,500,000		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		C—ATOMIC ENERGY OF CANADA LIMITED (RESEARCH PROGRAM)		
		Vote 65—Current Operation and Maintenance including expendable research equipment... (12)	58,919,000	56,883,000
		Expenditure Revenue		
		1965-66.....\$ 45,577,895 \$5,888,352		
		1966-67.....55,494,958 7,803,812		
		1967-68 (estimated).....67,844,000 10,961,000		
		Vote 70—Construction or Acquisition of Buildings, Works, Land and Equipment		
		Construction of Buildings and Works.....(8)	5,015,000	6,718,000
		Acquisition of Equipment.....(9)	6,166,000	5,905,000
			11,181,000	12,623,000
		Less: Retained Earnings.....(13)	9,681,000	3,006,000
			9,681,000	9,617,000
		Expenditure		
		1965-66.....\$ 14,253,757		
		1966-67.....13,904,700		
		1967-68 (estimated).....12,623,000		
		D—DOMINION COAL BOARD		
		Approximate Value of Major Services not Included in these Estimates		
		Accommodation (provided by Department of Public Works).....	18,300	15,800
		Accounting and cheque issue services (Comptroller of the Treasury).....	9,800	21,500
		Contributions to Superannuation Account (Treasury Board).....	10,800	10,100
		Contributions to Canada Pension Plan Account and Quebec Pension Plan Account (Treasury Board)....	1,300	1,100
		Employee surgical-medical insurance premiums (Trea- sury Board).....	300	900
		Carrying of franked mail (Post Office Department)....	1,100	900
			41,600	50,300

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		D—DOMINION COAL BOARD (Continued)		
		Vote 75—Administration and Investigations of the Dominion Coal Board		
1	1	Chairman (\$22,000)		
		Salaried Positions:		
		Administrative and Foreign Service:		
1		(\$18,000-\$21,000)		
	1	(\$16,000-\$18,000)		
1	2	(\$10,000-\$12,000)		
		Technical, Operational and Service:		
	1	(\$8,000-\$10,000)		
		Administrative Support:		
2	1	(\$6,000-\$8,000)		
7	9	(\$4,000-\$6,000)		
4	2	(Under \$4,000)		
16	17			
(16)	(17)			
		Salaries.....(1)	100,000	126,739
		Travelling Expenses.....(2)	7,000	6,000
		Expenses of Board Members.....(2)		8,000
		Postage.....(2)	100	100
		Telephones and Telegrams.....(2)	3,800	3,800
		Publication of Reports.....(3)	4,000	4,000
		Professional and Special Services.....(4)	30,000	75,000
		Members Per Diem allowances.....(4)		8,000
		Office Stationery, Supplies and Equipment.....(7)	3,600	3,200
		Sundries.....(12)	1,500	1,500
			150,000	236,339
		Expenditure		
		1965-66.....\$ 180,965		
		1966-67.....194,713		
		1967-68 (estimated).....226,400		
		Statutory—Payments in connection with the movements of coal under conditions prescribed by the Governor in Council		
		PAYMENTS IN CONNECTION WITH THE MOVEMENTS OF COAL UNDER CONDITIONS PRESCRIBED BY THE GOVERNOR IN COUNCIL (MINES AND TECHNICAL SURVEYS VOTE 75B, APPROPRIATION ACT NO. 10, 1964, AND MINES AND TECHNICAL SURVEYS VOTE 75D, 1965-66 ESTIMATES).....(10)	4,672,686	30,265,661
		Expenditure		
		1965-66.....\$ 22,363,631		
		1966-67.....37,698,975		
		1967-68 (estimated).....36,878,000		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		D—DOMINION COAL BOARD (Continued)		
		Statutory (Continued)		
		SUBSIDY PAYMENTS MADE UNDER AN ACT TO PLACE CANADIAN COAL, USED IN THE MANUFACTURE OF IRON AND STEEL, ON A BASIS OF EQUALITY WITH IMPORTED COAL.....(10)		125,000
		Expenditure		
		1965-66..... \$ 134,611		
		1966-67..... 82,259		
		1967-68 (estimated)..... 30,000		
		Total, Statutory Item.....	4,672,686	30,390,661
		Expenditure		
		1965-66..... \$ 23,062,762		
		1966-67..... 22,498,242		
		1967-68 (estimated)..... 33,261,225		
		Vote 80—Payment to New Brunswick in the fiscal year 1968-69 of \$2,800,000 and annual payments in each of the four fiscal years commencing on the first day of April, 1969 and ending on the 31st day of March, 1973 of \$4,050,000 to assist the Province in its program of rationalization of the Minto coal fields, in accordance with terms and conditions set out in an agreement entered into between New Brunswick and Canada with the approval of the Governor in Council, and to authorize in accordance with the agreement the transfer to New Brunswick of the rights, benefits and obligations existing and outstanding under all loan agreements entered into pursuant to the Coal Production Assistance Act with coal producers in New Brunswick, the principal sum of which, carried as an asset of Canada, amounted to \$597,314 as of March 31, 1968; amount required for 1968-69.....(10)	3,397,314	
		Appropriation not required for 1968-69		
		Acquisition of equipment for installation in the Princess colliery of the Nova Scotia Steel and Coal Company Limited and the collieries of the Dominion Coal Company Limited in accordance with agreements to be entered into with the approval of the Governor in Council by the Dominion Coal Board and the said Companies.(9)		2,000,000

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		E—NATIONAL ENERGY BOARD		
		Approximate Value of Major Services not included in these Estimates		
		Accommodation (provided by the Department of Public Works).....	83,400	73,500
		Accounting and cheque issue services (Comptroller of the Treasury).....	6,900	7,300
		Contributions to Superannuation Account (Treasury Board).....	109,900	78,000
		Contributions to Canada Pension Plan Account and Quebec Pension Plan Account (Treasury Board)....	10,900	68,000
		Employee surgical-medical insurance premiums (Treas- ury Board).....	2,700	5,100
		Employee compensation payments (Department of Labour).....	100	100
		Carrying of franked mail (Post Office Department)....	10,000	3,600
			223,900	235,600
		Vote 85—Administration		
1	1	Chairman (\$27,000)		
1	1	Vice-Chairman (\$24,250)		
3	3	Member (\$23,000)		
		Salaried Positions:		
		Executive, Scientific and Professional:		
1	1	Chief Engineer, National Energy Board (\$21,840—\$22,880)		
4	4	(\$18,000—\$21,000)		
3	3	Senior Officer 1 (\$16,500—\$21,250)		
		Administrative and Foreign Service:		
2		(\$18,000—\$21,000)		
13	4	(\$16,000—\$18,000)		
14	12	(\$14,000—\$16,000)		
10	12	(\$12,000—\$14,000)		
15	14	(\$10,000—\$12,000)		
8	13	(\$8,000—\$10,000)		
4	3	(\$6,000—\$8,000)		
	3	(\$4,000—\$6,000)		
		Technical, Operational and Service:		
1	1	(\$10,000—\$12,000)		
3	1	(\$8,000—\$10,000)		
13	9	(\$6,000—\$8,000)		
1	2	(\$4,000—\$6,000)		
2		(Under \$4,000)		
		Administrative Support:		
7	5	(\$6,000—\$8,000)		
37	33	(\$4,000—\$6,000)		
3	7	(Under \$4,000)		
146	132			
(146)	(132)	Continuing Establishment.....	1,329,000	1,252,500
(3)	(3)	Casuals and Others.....	10,000	15,000
(149)	(135)	Salaries and Wages.....(1)	1,339,000	1,267,500
		Travelling and Removal Expenses.....(2)	68,000	82,000
		Postage.....(2)	300	200
		Freight, Express and Cartage.....(2)	2,000	1,600
		Telephones and Telegrams.....(2)	24,000	27,000
		Advertising.....(3)	500	1,000
		Publications.....(3)	7,000	3,500
		Professional and Special Services.....(4)	121,500	74,000
		Rental of Office Equipment.....(5)	2,000	4,800

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		E—NATIONAL ENERGY BOARD (Continued)		
		Vote 85 (Continued)		
		Repair and Upkeep of Office Equipment.....(6)	1,000	500
		Office Stationery, Supplies and Equipment.....(7)	30,000	25,700
		Furniture and Fixtures.....(9)	5,000	10,000
		Sundries.....(12)	1,700	2,200
			1,602,000	1,500,000
		Expenditure		
		1965-66.....\$ 944,963		
		1966-67.....1,128,350		
		1967-68 (estimated).....1,575,000		

EXTERNAL AFFAIRS

No. of Vote	Service	1968-69	1967-68	Change	
				Increase	Decrease
		\$	\$	\$	\$
	A—DEPARTMENT (Continued)				
	SUMMARY				
	To be voted.....	84,954,150	81,782,700	3,171,450	
	Authorized by Statute.....	87,000	158,000		71,000
		85,041,150	81,940,700	3,100,450	
	B—EXTERNAL AID OFFICE				
30	Salaries and Expenses (Details, page 132).....	4,003,000	2,948,700	1,054,300	
35	Economic, technical, educational and other assistance as detailed in the Estimates (De- tails, page 133).....	138,500,000	130,239,000	8,261,000	
		142,503,000	133,187,700	9,315,300	
	C—INTERNATIONAL JOINT COMMISSION				
40	Salaries and Expenses of the Commission and Canada's share of the expenses of studies, surveys and investigations of the Commission (Details, page 135).....	484,100	489,200		5,100

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		C—INTERNATIONAL JOINT COMMISSION		
		Approximate Value of Major Services not included in these Estimates		
		Accommodation (provided by the Department of Public Works).....	18,800	18,900
		Accounting and cheque issue services (Comptroller of the Treasury).....	2,800	5,500
		Contributions to Superannuation Account (Treasury Board).....	13,200	11,000
		Contributions to Canada Pension Plan Account and Quebec Pension Plan Account (Treasury Board)....	900	800
		Employee surgical-medical insurance premiums (Treasury Board).....	300	600
		Employee compensation payments (Department of Labour).....	100	100
			36,100	36,900
		Vote 40—Salaries and Expenses of the Commission and Canada's share of the expenses of studies, surveys and investigations of the Commission		
		SALARIES AND EXPENSES OF THE COMMISSION		
1	1	Chairman, Canadian Section (\$23,000)		
2	2	Commissioner, Canadian Section (\$12,960)		
		Salaried Positions:		
		Administrative and Foreign Service:		
1	1	Senior Officer 1 (\$16,500—\$21,250)		
1		(\$14,000—\$16,000)		
1	2	(\$12,000—\$14,000)		
		Technical, Operational and Service:		
1	1	(\$6,000—\$8,000)		
		Administrative Support:		
2	2	(\$6,000—\$8,000)		
2	2	(\$4,000—\$6,000)		
1	1	(Under \$4,000)		
12	12			
(12)	(12)			
		Salaries..... (1)	132,500	124,700
		Travelling Expenses..... (2)	15,000	15,000
		Postage..... (2)	200	100
		Telephones and Telegrams..... (2)	3,500	3,000
		Advertising of Public Hearings..... (3)	3,500	3,000
		Reporters' and Professional Fees..... (4)	3,500	2,500
		Office Stationery, Supplies and Equipment..... (7)	2,000	3,000
		Acquisition of Furniture and Furnishings..... (9)	1,000	3,000
		Sundries..... (12)	1,000	900
			162,200	155,200
		Expenditure		
		1965-66..... \$ 126,001		
		1966-67..... 146,746		
		1967-68 (estimated)..... 150,000		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		C—INTERNATIONAL JOINT COMMISSION (Continued)		
		Vote 40 (Continued)		
		CANADA'S SHARE OF THE EXPENSES OF STUDIES, SURVEYS AND INVESTIGATIONS OF THE INTER- NATIONAL JOINT COMMISSION		
		Studies and surveys of the Mid-Western Watershed.....		2,000
		Canada's share of the expenses of the Champlain Water- way Reference.....		2,000
		Canada's share of the expenses of the studies of Boundary Waters Pollution.....	306,900	310,000
		Canada's share of the expenses of the Great Lakes Levels Reference and St. Lawrence Board of Control.....	5,000	10,000
		Canada's share of the Air Pollution Reference	5,000	10,000
		American Falls Reference.....	5,000	
		(4)	321,900	334,000
		Expenditure		
		1965-66..... \$ 52,709		
		1966-67..... 145,430		
		1967-68 (estimated)..... 300,000		
		Total, Vote 40.....	484,100	489,200
		Expenditure		
		1965-66..... \$ 178,710		
		1966-67..... 292,176		
		1967-68 (estimated)..... 450,000		

No. of Vote	Service	1968-69	1967-68	Change	
				Increase	Decrease
		\$	\$	\$	\$
	B—NATIONAL RESEARCH COUNCIL				
15	Administration, Operation and Maintenance (Details, page 551).....	45,033,000	40,463,500	4,569,500	
20	Construction or Acquisition of Buildings, Works, Land and Equipment (Details, page 552).....	5,399,000	9,300,000	.....	3,901,000
25	Scholarships and Grants in aid of Research (Details, page 553).....	59,017,000	45,500,000	13,517,000	
30	Assistance towards Research in Industry under terms and conditions approved by the Gover- nor in Council including authority, notwith- standing section 30 of the Financial Admin- istration Act, to make commitments for the current year not to exceed a total amount of \$7,300,000 (Details, page 553).....	6,100,000	5,700,000	400,000	
		115,549,000	100,963,500	14,585,500	

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
B—NATIONAL RESEARCH COUNCIL				
Approximate Value of Major Services not included in these Estimates				
		Accommodation (provided by the Department of Public Works).....	686,000	623,800
		Accommodation (in this Agency's own buildings).....	3,143,000	2,977,900
		Accounting and cheque issue services (Comptroller of the Treasury).....	258,800	239,300
		Contributions to Superannuation Account (Treasury Board).....	2,619,100	2,158,700
		Contributions to Canada Pension Plan Account and Quebec Pension Plan Account (Treasury Board)....	317,400	242,900
		Employee surgical-medical insurance premiums (Treasury Board).....	82,500	187,300
		Employee compensation payments (Department of Labour).....	17,600	20,600
		Carrying of franked mail (Post Office Department)....	237,500	161,700
			7,361,900	6,612,200
Vote 15—Administration, Operation and Maintenance				
Salaried Positions:				
Executive, Scientific and Professional:				
1	1	President (\$28,750)		
1	1	Vice-President (Administration) (\$24,500)		
2	2	Vice-President (Scientific) (\$24,500)		
2	2	Director (\$24,500)		
14	13	Director (\$21,250-\$23,500)		
6	6	Assistant Director (\$18,450-\$21,250)		
1	1	Principal Research Officer (\$21,750)		
54	52	Principal Research Officer (\$18,450-\$21,250)		
5	4	Research Council Officer 5 (\$18,450-\$21,250)		
158		(\$18,000-\$21,000)		
	154	(\$16,000-\$18,000)		
269	2	(\$14,000-\$16,000)		
3	244	(\$12,000-\$14,000)		
194	216	(\$10,000-\$12,000)		
30	34	(\$8,000-\$10,000)		
200	9	(\$6,000-\$8,000)		
	150	(\$4,000-\$6,000)		
Administrative and Foreign Service:				
3	1	(\$16,000-\$18,000)		
4	4	(\$14,000-\$16,000)		
12	5	(\$12,000-\$14,000)		
25	22	(\$10,000-\$12,000)		
87	87	(\$8,000-\$10,000)		
24	26	(\$6,000-\$8,000)		
Technical Operational and Service:				
3	2	(\$14,000-\$16,000)		
18	14	(\$12,000-\$14,000)		
130		(\$10,000-\$12,000)		
400	494	(\$8,000-\$10,000)		
674	513	(\$6,000-\$8,000)		
315	459	(\$4,000-\$6,000)		
3	55	(Under \$4,000)		

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		B—NATIONAL RESEARCH COUNCIL (Continued)		
		Vote 1 (Continued)		
		Salaried Positions: (Continued)		
		Administrative Support:		
		(\$8,000-\$10,000)		
7	7			
71	67	(\$6,000-\$8,000)		
372	329	(\$4,000-\$6,000)		
51	77	(Under \$4,000)		
3,137	3,053			
(3,137)	(3,053)			
(678)	(686)			
		Continuing Establishment.....	25,034,100	24,190,800
		Casuals and Others.....	4,601,000	4,511,600
(3,815)	(3,739)	Gross Salaries and Wages.....(1)	29,635,100	28,702,400
		Less—Salaries of Plant Engineering Services and Mechanical Engineering (Experimental Shops) which are paid from charges made to Divisions for services rendered.....(13)	500,000	500,000
		Net Salaries.....	29,135,100	28,202,400
		Overtime.....(1)	110,000	70,000
		Allowances.....(1)	151,600	320,000
		Travelling and Removal Expenses.....(2)	737,000	700,900
		Travel—Non-Public Servants.....(2)	121,000	191,500
		Freight, Express and Cartage.....(2)	150,000	140,000
		Postage.....(2)	50,000	47,000
		Telephones and Telegrams.....(2)	321,000	261,700
		Publication of Scientific Journals and Other Material.....(3)	1,135,000	914,100
		Exhibits, Advertising, Films, Broadcasting and Displays.....(3)	130,000	125,000
		Professional and Special Services.....(4)	5,774,400	4,286,000
		Rental of Land, Buildings and Works.....(5)	250,000	200,000
		Rental of Office Equipment, Computers and Related Equipment.....(5)	1,244,000	650,000
		Repairs and Upkeep of Buildings and Works.....(6)	765,000	606,000
		Repairs and Upkeep of Equipment.....(6)	375,000	312,000
		Repairs and Maintenance of Office Equipment and Computers.....(6)	150,000	125,000
		Office Stationery, Supplies and Equipment.....(7)	793,900	604,300
		Library Books and Periodicals.....(7)	500,000	420,000
		Materials and Supplies.....(7)	3,190,000	3,290,000
		Municipal or Public Utility Services.....(7)	1,030,000	900,000
		Expendable Research Equipment.....(9)	6,116,000	5,400,000
		Sundries and Contingencies.....(12)	52,000	43,600
			52,281,000	47,809,500
		Less—Estimated transfer from revenue (\$5,283,000) and amount recoverable from U.S. Government (\$1,965,000).....(13)	7,248,000	7,346,000
			45,033,000	40,463,500
		Expenditure Revenue		
		1965-66.....\$ 31,174,279 \$4,641,847		
		1966-67.....36,702,066 4,865,057		
		1967-68 (estimated).....41,132,274 5,821,000		
		Vote 20—Construction or Acquisition of Buildings, Works, Land and Equipment		
		Construction or Acquisition of Buildings and Works.....(8)	5,234,000	8,893,500
		Acquisition of Equipment.....(9)	400,000	756,500
			5,634,000	9,650,000

Positions (man-years)		Details of Services	Amount	
1968-69	1967-68		1968-69	1967-68
			\$	\$
		B—NATIONAL RESEARCH COUNCIL (Continued)		
		Vote 20 (Continued)		
		Less—Amount recoverable from U.S. Government. (13)	235,000	350,000
			5,399,000	9,300,000
		Expenditure		
		1960-66..... \$ 6,094,867		
		1966-67..... 7,091,785		
		1967-68 (estimated)..... 9,300,000		
		Vote 25—Scholarships and Grants in Aid of Research		
		Science and Engineering..... (10)	59,100,000	45,583,000
		Grant to the Royal Society of Canada..... (10)	17,000	17,000
			59,117,000	45,600,000
		Less—Estimated transfer from Revenue..... (13)	100,000	100,000
			59,017,000	45,500,000
		Expenditure		
		1965-66..... \$ 21,450,000		
		1966-67..... 34,150,000		
		1967-68 (estimated)..... 45,500,000		
		Vote 30—Assistance towards Research in Industry under terms and conditions approved by the Governor in Council including authority not- withstanding section 30 of the Financial Admin- istration Act, to make commitments for the cur- rent year not to exceed a total amount of \$7,300,000		
		Assistance towards research in industry..... (10)	6,100,000	3,700,000
		Expenditure		
		1965-66..... \$ 3,306,262		
		1966-67..... 4,198,994		
		1967-68 (estimated)..... 5,200,000		

LOANS, INVESTMENTS AND ADVANCES

No. of Vote	Service	1968-69	1967-68	Change	
				Increase	Decrease
		\$	\$	\$	\$
	COMMUNICATIONS				
	Canadian Overseas Telecommunication Corporation*				
L1	Loans to the Canadian Overseas Telecommunication Corporation in accordance with Section 14 of the Canadian Overseas Telecommunication Corporation Act for additions and betterments to facilities.....	10,500,000	6,600,000	3,900,000	
	ENERGY, MINES AND RESOURCES				
	Atomic Energy of Canada Limited				
L5	Loans in the current and subsequent fiscal years to Atomic Energy of Canada Limited, in such amounts and on such terms and conditions as the Governor in Council may approve, to finance the construction of the Candu-BLW 250 nuclear power station in Quebec; to share in the construction of the Pickering Generating Station under agreement between the Federal Government, the Province of Ontario and the Hydro Electric Power Commission of Ontario; to finance the construction of manufacturing facilities and a laboratory for the Commercial Products Division at South March; to finance the construction of housing and other works near the Whiteshell Nuclear Research Establishment.....	51,000,000	32,000,000	19,000,000	
L10	Loans to Atomic Energy of Canada Limited in the current and subsequent fiscal years, in such amounts and on such terms and conditions as the Governor in Council may approve, to finance the purchase of Canadian-produced Heavy Water for resale to Canadian and foreign users.....	4,600,000	10,500,000		5,900,000
L15	Loans to Atomic Energy of Canada Limited in the current and subsequent fiscal years, in such amounts and on such terms and conditions as the Governor in Council may approve, to finance the construction of transmission facilities in connection with the Nelson River Power Project, in accordance with an agreement between Canada and Manitoba; to authorize Atomic Energy of Canada Limited to construct, control, lease and dispose of the said transmission facilities.....	40,000,000	15,000,000	25,000,000	
L20	Loans to Atomic Energy of Canada Limited, subject to such terms and conditions as the Governor in Council may approve, to make an advance payment to Deuterium of Canada Limited based on the value of one year's production by that Corporation of heavy water.....	16,400,000	16,400,000		
		112,000,000	73,900,000	38,100,000	

*Formerly reporting through the Minister of Transport.

OFFICIAL REPORT OF MINUTES
OF
PROCEEDINGS AND EVIDENCE

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ALISTAIR FRASER,
The Clerk of the House.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968

STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 2

TUESDAY, OCTOBER 29, 1968

Revised Main Estimates (1968-1969) of the Department of
Energy, Mines and Resources

APPEARING:

Mr. R. J. Orange, Parliamentary Secretary to the Minister of
Energy, Mines and Resources.

WITNESSES:

From the Department of Energy, Mines and Resources: Dr. C. M. Isbister,
Deputy Minister; and Mr. J. C. Allen, Senior Financial Adviser.

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

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Vice-Chairman: Mr. K. R. Hymmen

and Messrs.

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Langlois,
* Marchand
(Kamloops-Cariboo),
Moores (Bonavista-
Trinity-Conception),

Orange,
Ricard,
³ Ritchie,
² Roy (*Timmins*),
Serré,
Sulatycky—(20)

(Quorum 11)

M. Slack,
Clerk of the Committee.

² Replaced Mr. Smerchanski on October 17, 1968.

³ Replaced Mr. Code on October 28, 1968.

⁴ Replaced Mr. Harries on October 28, 1968.

ORDERS OF REFERENCE

THURSDAY, October 17, 1968.

Ordered,—That the name of Mr. Roy (*Timmings*), be substituted for that of Mr. Smerchanski on the Standing Committee on National Resources and Public Works.

MONDAY, October 28, 1968.

Ordered,—That the names of Messrs. Ritchie and Marchand (*Kamloops-Cariboo*) be substituted for those of Messrs. Code and Harries on the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER,
The Clerk of the House of Commons.

MINUTES OF PROCEEDINGS

TUESDAY, October 29, 1968.
(2)

The Standing Committee on National Resources and Public Works met this day at 9:40 a.m. The Chairman, Mr. Leonard Hopkins, presided.

Members present: Messrs. Aiken, Beaudoin, Chappell, Danson, Deakon, Gilbert, Harding, Hopkins, Hymmen, Langlois, Marchand (*Kamloops-Cariboo*), Orange, Ricard, Ritchie, Roy (*Timmins*), Serré and Sulatycky—(17).

In attendance: From the Department of Energy, Mines and Resources: Dr. C. M. Isbister, Deputy Minister; Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J.-P. Drolet, Assistant Deputy Minister (Mineral Development); Dr. A. T. Prince, Acting Assistant Deputy Minister (Water); Mr. G. M. MacNabb, Assistant Deputy Minister (Energy Development); Mr. J. C. Allen, Senior Financial Adviser; and Mr. R. B. Code, Senior Personnel Adviser.

The Chairman announced the composition of the Subcommittee on Agenda and Procedure as follows: Messrs. Hopkins, Hymmen, Orange, Aiken, Gilbert and Beaudoin.

The Chairman read the First Report of the Subcommittee on Agenda and Procedure. (*See Evidence*)

Mr. Chappell, moved, seconded by Mr. Deakon, that the Report be amended by referring back to the Subcommittee on Agenda and Procedure the matter of the visit to Burlington, Ontario. The amendment was carried.

On motion of Mr. Deakon, seconded by Mr. Marchand (*Kamloops-Cariboo*), the First Report of the Subcommittee on Agenda and Procedure, as amended, was concurred in.

The Chairman called Dr. Isbister who introduced his officials and outlined their respective functions.

The Chairman advised that the Hon. Mr. Greene was out of the country and therefore Items 1 and 5 of his Estimates would not be carried until his return.

The Chairman called Item 1, Departmental Administration of the Revised Estimates (1968-69) of the Department of Energy, Mines and Resources, and Mr. Orange, Parliamentary Secretary to the Minister, made an opening statement dealing with the responsibilities of the various branches of the department.

Dr. Isbister reviewed a document dealing with the Estimates of his department expanding on the information supplied in the Estimates and was examined thereon, assisted by Mr. Allen. Copies of the document were distributed to members of the Committee.

The examination of the witnesses still continuing, at 11:00 a.m., the Committee adjourned until 9.30 a.m. on Thursday, October 31.

M. Slack,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, October 29, 1968

• 0939

The Chairman: The first item on the agenda is the report of the Steering Committee. Your Steering Committee met on Friday morning. Members were the Chairman, Mr. Hymmen, Mr. Orange, Mr. Aiken, Mr. Gilbert, and Mr. Beaudoin. Your Subcommittee on Agenda and Procedure met and discussed matters relating to procedure in this Committee. It was the feeling of your Steering Committee that in the examination of witnesses, no supplementary questions should be allowed on the first round and that the Chairman should use his discretion in allotting time to each member. It was thought by some that when one or two people get on a long trend of questioning, it takes up the time of some of the other members on the Committee. So we felt that approximately 10 minutes would be suitable to allow a person a line of questioning. When you are nearing the 10-minute mark, I will tell you that your time is just about up and then if you will round out your questioning with one additional question, you can be placed on the second round.

Sometimes supplementary questions can extend a questioning period, and sometimes ruin someone else's line of questioning. So on the first round we recommended that there be no supplementary questions, but we could allow some of these on the second round.

We will have a discussion on Item No. 2 before going on to the remainder of the report. Your Subcommittee discussed the possibility of visiting the Canada Centre for Inland Waters at Burlington, Ontario, and the Fuels Research Centre on the Corkstown Road in the Ottawa area, and recommends that the main committee visit these two federal projects in November. The two suggested dates are November 7 and November 14. I will open the meeting for comment on these two visits.

Mr. Aiken: I think probably the visit to the Corkstown Road could be done in an

informal way. I understand just from what you have said now and what you said previously that there may be some difficulties in organizing an official visit of the Committee. We are not going to take evidence, so I would suggest that we do make that visit. It is close by. We can do it in our own vehicles on an unofficial basis.

I would like to see us make the Burlington trip before too long because I think it is something that we ought to inform ourselves about.

The Chairman: Are there any more comments on the Burlington trip?

Mr. Chappell: I, personally, would rather have it stand off for a little while until I know where I am going and have done a little study and a little research, so I will appreciate what I should look for and what I expect to see when I do get to Burlington. Right now I am not ready for it. I do not think I would get the best out of it.

• 0945

Mr. Hymmen: Mr. Chairman, because of the weather at this time of year, the Burlington trip may be more suitable at a later date.

The Chairman: In view of this discussion, would someone like to move an amendment to the second section of our report, to the effect that the visit to Burlington be postponed to a later date? Would that be satisfactory to you, Mr. Aiken, on your suggestion?

Mr. Aiken: It does not really matter, but I understood that after we get into a certain period of the year—and perhaps some of the people more closely involved will know better about it—and we get on into December, January and February, the visit there will not be of much benefit to us, or not as much as if we could go when the water was open and there would be some advantage.

Now, I do not know, I have not been there; that is why I am anxious to make the trip. If

we can visit there just as well later in the year, then certainly it could be put off until later.

The Chairman: Perhaps we could ask Mr. Orange for a statement on this because I believe he had some suggestions to make about the weather aspects of this trip during the steering committee proceedings.

Mr. Orange: Mr. Chairman, it was my understanding, as Mr. Aiken said, that after a certain period it becomes a bit cold, particularly if the members of the Committee want to see any activities outside of the centre itself and possibly even go aboard some of the ships. However, I think perhaps Dr. Isbister, has not been introduced yet but who is sitting on your right, might just have some ideas about this in terms of timing. I think we want to get the most advantage out of whatever we do.

The Chairman: Mr. Isbister?

Dr. C. M. Isbister (Deputy Minister, Department of Energy, Mines and Resources): Thank you, Mr. Chairman. With all respect to the comments that have been made, our advice really is the sooner the better with the autumn season advancing. From the point of view of the trip itself, it is far more practicable, not to say pleasant, to be able to see the ships, the waterfront, the environment within which the new Canada centre of inland waters is placed on a relatively pleasant day and the autumn season is advancing very quickly now.

The Chairman: Would it be too late to do this when the lakes are free of ice in the spring? Obviously from the discussion we are talking either about the present or next spring, because it is quite obvious that any time during the winter is not the time to visit this centre. Mr. Deakon?

Mr. Deakon: I just want to ask one question, Mr. Chairman. First of all, I presume this trip to Burlington would entail just one day. Why not refer it back to the steering committee for consideration?

The Chairman: Is that agreed? We will go on to section 3, then, of the report.

Your subcommittee recommends that item 1 of the estimates of the Department of Energy, Mines and Resources be allowed to stand until the Minister returns.

I should explain here that the Minister of Energy, Mines and Resources is at present travelling with the Cabinet Committee in South America and will be back some time around the middle of November. Your steering committee suggested that we leave item 1 open so that we can have a report from him and have him before the Committee as soon as possible after his return.

• 0950

Mr. Danson: A suggestion on that to expedite things is that we could go down and visit him. The winter season is probably quite suitable.

The Chairman: Mr. Danson is always very original in his suggestions.

In the absence of the Minister we have with us today the Parliamentary Secretary to the Minister, Mr. Bud Orange, and the Deputy Minister, Dr. C. M. Isbister and his officials. I will introduce them after, but first of all I would like to have a motion to adopt the steering committee's report.

(See Minutes of Proceedings)

Mr. Chappell: Mr. Chairman, will we have a copy of the report before us?

The Chairman: It is not the general practice.

Mr. Chappell: How do we know what is in it? Do you read it?

The Chairman: I read it out just as I did this morning.

Mr. Roy (Timmins): Mr. Chairman, it might save some time if we did have the report before we got here.

The Chairman: We will look into that, Mr. Roy. It is the usual practice that the steering committee report is never given prior to the opening of the Committee meeting, but we will look into it.

I now call Item 1 of the Revised Estimates of the Department of Energy, Mines and Resources, Departmental Administration, and ask Mr. Orange to make an opening statement.

Mr. Aiken: Mr. Chairman, I am sorry, I did not know you were going to proceed. I only want to hold up for a minute to point out to the Committee that as I mentioned to you privately we are having some difficulty in connection with times of meetings.

Three of our members have been caught in other committees which are meeting at exactly the same time; two in Fisheries, which is meeting from 9.30 a.m. to 11.00 a.m. on Tuesdays and Thursdays the same as this and, as they happen to be Maritime members, they consider Fisheries a priority.

We are going to try to see what can be done about this because it is a most difficult matter for us. I merely raise it to point out that this is a situation we are going to have to try to resolve, probably with other committees as well.

The Chairman: Mr. Aiken, did you ascertain whether there was a conflict with these same members on Thursday as well as on Tuesday?

Mr. Aiken: Exactly the same hours at 9.30 a.m. to 11.00 a.m. on Tuesdays and Thursdays both committees are sitting. We will try to work it out. I raise it now merely to explain. We have to do something in the future about making an effort to get these particular members on, because they are on the standing committees.

Mr. Deakon: May I suggest that Mr. Aiken determine with his colleagues what dates are agreeable to them and discuss it with you and we can decide at a future meeting.

Mr. Aiken: We are pretty well locked in, I am afraid. I do not know how we are going to meet it.

The Chairman: I would be glad to meet with Mr. Aiken and Mr. Deachman to see what we can arrange in that regard. Thanks, Mr. Aiken.

Before calling on Mr. Orange I might also say that after discussion of the estimates for Energy, Mines and Resources, it is expected that we will go on to the Atomic Energy of Canada Limited and thereafter to Atomic Energy Control Board at which time it is planned to have officials from those two bodies before us.

• 0955

Possibly before Mr. Orange starts his opening statement I should introduce the officials who are with us today. To my immediate right is the Deputy Minister of the Department of Energy, Mines and Resources, Dr. C. M. Isbister, and rather than my introducing the rest of these people as individuals, I am going to call on Dr. Isbister

to introduce them himself and possibly he can give you a little description of the line of work in which each is involved. Dr. Isbister?

Dr. Isbister: Thank you very much, Mr. Chairman. In doing that it might be convenient if the members were to open this piece that has been distributed called Revised Estimates for the Department of Energy, Mines and Resources and turn to page four which shows the Organizational Chart of the Department. We shall return to this later but, in the meantime, this page gives in short terms the general structure of this new government department.

The Chairman: Excuse me, Dr. Isbister. Before you get started I would like to say that these were just brought in this morning. The officials apologize, and I apologize, because these have not been as yet printed in French. However, we will have French copies of this document for you on Thursday morning. I am sorry; go ahead, Doctor.

Dr. Isbister: Thank you, Mr. Chairman. If you would look across the top of the four columns you will see that the Department is divided into four sectors—Mines and Geosciences, Mineral Development, Water and Renewable Resources, and Energy Development, for purposes of departmental operations. Each of these sectors is headed by an Assistant Deputy Minister. Three of the deputy ministers are present this morning; one is absent and represented by the Acting Assistant Deputy Minister.

Mines and Geosciences is headed by Dr. Harrison, who is on my right. I do not think it is necessary to say to any group in Ottawa that Dr. Harrison is an eminent scientist in his own right and recognized as such in the government, outside the government service and outside Canada.

Proceeding on, Mr. J. P. Drolet is the Assistant Deputy Minister, Mineral Development sector of the Department. Mr. Drolet similarly brings a broad experience and confidence to his sector of the Department's work as a senior adviser. Mr. Drolet is a former teacher, a former civil servant of the Province of Quebec, a former senior officer of one of the large private mining companies in Canada and himself trained as a mining engineer.

The next sector, Water and Renewable Resources, is represented this morning by the Acting Assistant Deputy Minister, Dr. Prince, whose usual job is Director of Inland Waters.

Dr. Prince has a formidable array of talents to bring to bear on the inland waters field which include pollution and the problems connected therewith, as well as water management. Quite often people in the Department say within my hearing that the success of the programs that we are developing as quickly as possible in the field of pollution depend more than anything else on the talents and experience that Dr. Prince brings to bear on these.

• 1000

The fourth assistant deputy minister is Mr. G. M. MacNabb, who heads up the Energy Development sector. Mr. MacNabb is the newest assistant deputy minister in the Department and although he is in charge of the newest field in the Department it is one of the most important. He is trained as an engineer. He is in fact as young as he looks, but he has already during his career in the government assembled an impressive record of service with distinction in successive jobs.

Mr. J. C. Allen is the Senior Financial Adviser to the Department, to the Minister and to me. Mr. Allen had years of experience in the Treasury Board in various phases of governmental financial management, following that a tour of duty in the National Research Council, after which we were able to attract him into the top financial slot in our Department.

Next is Mr. R. B. Code who is the top Personnel Adviser in the Department. Mr. Code similarly is a veteran of many years of experience in his field and one of the main people on whom the Department relies for sound continuing administration and advice with respect to the important field of personnel.

These are all the Departmental officers present this morning, Mr. Chairman.

The Chairman: Thank you very much, Dr. Isbister. I will now call on Mr. Orange to deliver the opening statement on behalf of the Minister.

Mr. Orange (Parliamentary Secretary to the Minister of Energy, Mines and Resources): Thank you very much, Mr. Chairman. As you know, Mr. Greene is in South America on a ministerial tour. He will be back mid-November at which time he will come before the Committee to make a statement to you with regard to the role and activities of the Department.

You have met the senior officers of the Department—Dr. Isbister, the assistant deputy ministers and senior financial and personnel advisers.

In preparation for this meeting the Department has put together the brown envelopes which you have in front of you. These envelopes contain public information material and samples of the end products of the Department's endeavours.

I would like to refer you in particular to the set of papers entitled "Revised Estimates", to which Dr. Isbister has already referred. These estimates were especially prepared for the Committee because the Department has attempted to do two things to assist us in dealing with our program plans and budgets. By taking the Blue Book details in summary form, it is the hope to provide members of the Committee with a bird's-eye view of the Department and its various elements by providing a description of the organization and purposes of the Department, its sectors and its branches. It is the hope that this will facilitate the Committee's understanding of the aims and objectives of the Department of Energy, Mines and Resources.

If you, Mr. Chairman, and members of the Committee agree, you may wish to employ these papers as a working agenda for our deliberations in the Committee.

The Chairman: Is it agreed that we do this?

• 1005

Mr. Aiken: I have not had a chance to check these. Are they a summary of the Blue Book estimates?

Mr. Orange: Yes.

Mr. Aiken: But they are re-arranged in some detail?

Mr. Orange: They are a summary of the Blue Book estimates and are set out in such a way that we feel will be helpful to the Committee in understanding what the Department is doing.

The Chairman: Mr. Aiken, I might say that I have as the next item on my agenda a request for Dr. Isbister to equate this document with the Blue Book immediately following Mr. Orange's statement and perhaps at that time we will ask for agreement.

Mr. Orange: In the major re-organization of the federal government responsibilities announced in 1965, the new Department of Energy, Mines and Resources was assigned responsibility for developing several functions which had not previously existed anywhere. These included co-ordination of policy advice and programs pertaining to water, water pollution, energy and its sources, and resources generally. Following the 1965 announcement, general organization structures for the Department were assigned and given approval. Assistant Deputy Ministers and other key staff were appointed; they in turn became actively engaged in the planning of programs. All this took considerable time.

The Department's Water Sector plans an effective professional research competence in scientific engineering and socio-economic fields in key respects of Canadian water. Through its Policy and Planning Branch the Sector will establish a comprehensive legislative framework for necessary federal-provincial action; and effective co-ordination of federal water programs and the development of suitable organization and institutional arrangements.

Water demand inventories must be started and staff recruited to co-ordinate and assess water policy programs and projects carried out by various government agencies. The Inland Waters Branch, through the programs of its several divisions, provides basic information and data on stream flow, water levels, hydrology, water quality, pollution abatement and engineering to meet the growing demands for assistance in the federal and provincial governments and the private sector.

Of particular importance is the program of the newly-created Great Lakes Division of the Inland Waters Branch, where investigations are planned to cope with control of pollution in the Great Lakes-St. Lawrence system and ultimately other large lakes where there is an important federal responsibility and need for research capability. All the above programs are consistent with public assurances that the government intends to respond to the general concern about water pollution and water management.

The Department plans, through its Marine Services Branch—a component of the Water Sector—to include further development of the science of oceanography which is a prerequisite to the exploitation of the resources of the

oceans, continental shelves and ocean floor. On the East Coast efforts will be made to maintain the leading scientific position of the Atlantic Oceanographic Laboratory. This was formerly known as the Bedford Institute of Oceanography, whose accomplishments in identifying the sedimentary strata of the continental shelves have resulted in exploration for offshore oil.

Through the programs of the Mineral Development Sector of the Department plan to move quickly with programs for conservation, safety and control regarding offshore oil so that appropriate regulations will be available before commercial production begins.

In the Mines and Geosciences Sector the Surveys and Mapping Branch provides basic control on which all other mapping depends. Its capabilities and the Department's map-producing facilities must be expanded to meet the heavy and growing demand for new maps, especially from exploration companies and resource development agencies. The Geological Survey of Canada is the government's agency for mineral exploration. Reserves of minerals must be replenished by new discoveries that are increasingly difficult and costly to make. Resources are needed to develop new methods for airborne geological and geophysical surveys and their application for remote sensing from satellites.

• 1010

Investigations must be started on the Pacific continental shelf where petroleum searches are under way. Important new techniques in geochemistry and in integrated studies of mineral deposits should be developed.

The Mines Branch investigates the mining of ores and their extraction from the rocks to develop new and more efficient methods of utilizing the resources we have. Long-range studies on the methods of using low-grade fuels, especially oil sands and coal, are important contributions to the utilization of a major national resource.

The Observatories Branch undertakes fundamental studies in both geophysics and astronomy to enable the Department to make significant contributions to our knowledge of the earth and thereby enable us better to win the resources from it.

The Mineral Development Sector plans more comprehensive economic analysis and policy advice in the fields of resource devel-

opment and assess economic trends so as to provide guidelines on related programs of the Department and other federal agencies for better planning of their investigations to suit the national needs.

The Energy Development Sector of the Department has broad responsibilities relating to the development of plans and policies for all forms of energy; the development of programs, legislation and agreements to implement these policies; the direction of studies relating to energy sources and requirements and the co-ordination of policy advice.

The programs to be undertaken by this Department will contribute not only to the stimulation and growth of the national economy but, in the field of water management, to the conservation of what has been recognized as the key resource affecting the quality of man's environment.

The Chairman: Thank you, Mr. Orange. Now, getting back to this document that has been given to you concerning the revised estimates, I will call upon Dr. Isbister to describe it to you in relation to the estimates as they appear in the Blue Book.

Dr. Isbister: Thank you, Mr. Chairman. May I please just say as an introduction to my comments on this pamphlet that I and the other officers of the Department who have come to assist this Committee do so with very full respect for the functions of the Committee.

We are impressed by the fact that our programs in total amount to spending \$110 million during the year now in question. We are seven-twelfths of the way through this year. As you can see, we have 5.5 thousand man-years of people employed as really what you might think of as the general manager or the managing director of this Department operating under the authority of Parliament. I always feel that we lack enough to do everything we would like to do, but the amount is enough in total to impress me with our responsibility to the taxpayers of this country.

We appreciate very well the responsibilities of the members of this Committee. My officers in coming here are coming to answer questions to provide information to be of assistance; not in any sense to try to guide or direct the interests of the Committee. We feel certain that the Committee will wish to probe deeply into various significant aspects of the

Department's operations. We welcome this and will co-operate with it fully.

I wish to say this, Mr. Chairman, because I go on to say that in bringing forward this little informal pamphlet entitled "Revised Estimates, 1968-69, for the Department of Energy, Mines and Resources" we believe that this puts the Blue Book information into a form that will provide a better framework for the Committee's discussions than the Blue Book itself. The Blue Book in general follows Votes as it must in the traditional form. An effort has been made on these pages to rearrange the same information to be consistent with the way we have actually organized and the way we administer the Department.

• 1015

May I draw your attention to the highlights of this? The first page, the "Departmental Summary", essentially is to be found in the Blue Book. It gives the major figures with the familiar summary headings. The second page begins to show what we have tried to do. This is the Departmental Summary and in this we show under the headings the three categories; first of all "Administration..."; second, capital called "Construction or Acquisition", and third, "Grants, Contribution and Subsidies".

We break under this each of the major program areas of the Department. "Mines, Minerals, Energy and Geosciences" appears under each of the three headings. "Water and Coordination of Renewable Resources Program" appears under each of the three and the other sectors appear appropriately under either the first heading or the first and second.

Again, Mr. Chairman, we feel sure that in bringing forward figures for discussion what the Committee really wishes to do is to use this summary information as a framework for orderly discussion within which to raise whatever questions are important to the individual Members and to the Committee about Departmental Administration and Departmental Programs, and it seems to us that this framework is the one that contributes best to that sort of orderly discussion.

The next page of summary notes, called Departmental Memorandum, has been provided as helpful information, additional to what can be found in the Blue Book. Again the arrangement we have proposed on the

preceding page lends itself to the sorts of explanations that are provided on this page.

I have already drawn the attention of the Committee to the administrative chart of the Department, which follows on the next page.

I might just say at this point, Mr. Chairman, that this Committee, in reviewing the 1969 Estimates of our Department, is looking at the first full year estimates for the Department of Energy, Mines and Resources. The Department was, of course, created as a legal entity in the preceding year, but was still operating on the inherited budgets of the predecessor organization. Therefore, this organizational chart portrays the new organization, the administration and operations of which are accounted for the first complete year in the information that is now before you.

The following two pages, taking pages five and six properly numbered, are the sector of Mines, Minerals, Energy and Geosciences, brought together in one vote group in the Blue Book; but in this we have again the headings of Administration, Operation and Maintenance, followed by capital. We have tried to be of assistance by itemizing separately the man-year and expenditure figures pertaining to the operating areas of the Department—Energy Development, Mineral Development, Mines and Geosciences including surveys and mapping, geological survey, the Mines Branch which is called Mining and Metallurgical Investigations and Research, Research in Astronomy and Geophysics, Polar continental Shelf Project, and so forth; and that analysis is carried through to the capital item on page six.

• 1020

On the following three pages we have provided descriptive notes which are not contained in the Blue Book; and again the effort here has been to provide in written form some objective descriptive notes pertaining to the actual areas in the figures to assist the Members to find their way to the particular subjects of interest.

On page 10 we are carried, similarly, to the second major program area, Water and Coordination of Renewable Resources Programs. This corresponds to its own vote group in the Blue Book, but again we have re-arranged the information and provided enough detail to indicate in framework terms, both by expenditure and by employment under the summary headings of operations, capital and grants, the major areas of operations con-

tained in the water sector. These are: Marine Surveys and Research, Research and Investigations on Water Resources—Inland Waters, Research and Investigations on Water Resources—Policy and Planning, Office of the Assistant Deputy Minister, and so forth.

This summary, in turn, is followed by three pages of descriptive notes. Again we have prepared these as objectively as possible to provide the Members of the Committee with a description of the areas to which they refer; and again these notes are additional to explanations that can be found in the Blue Book.

On the very last page no special table is offered. It is just a page of descriptive notes on Departmental Administration and Special Supporting Services.

There is one technical detail I might just mention, Mr. Chairman, on the figures. I am sorry this is a little bit technical, but if you would please turn back to page two, we have done one thing that is additional to the Blue Book. If you will look down to the third and fourth lines, under Administration, Operation and Maintenance, you will see that we have broken Departmental Administration Vote 1 into two parts—Special Supporting Services and Departmental Administration. We have done the same thing with Vote 5 under capital. You will see the figure five repeated. What we have done is to separate into its two component parts the figure which is given as a total in the Blue Book.

Our purpose in doing this is to draw attention to the distinction, which is very important to us in the administration of the Department, between the administration, properly so-called, on the one side, and, on the other side, the Departmental Support Services which are administered from the centre; for example, computer sciences; that kind of thing.

• 1025

The Chairman: Thank you very much, Doctor. There is one item that I overlooked earlier on my agenda. That is that Items one and five should really be stood until the Minister's return. I believe I previously mentioned only Item one. To that I would like to add that Item five should be held over until the Minister returns.

Is everybody agreed?

Some hon. Members: Agreed.

Mr. Aiken: The understanding here is that we will consider it but not pass it?

The Chairman: That is right.

Mr. Gilbert: Mr. Chairman, on a point of information, could Dr. Isbister describe to us what is meant by "man-years"?

Dr. Isbister: This is a very technical question because it has to be contrasted with the other form of accounting. With your permission I would like to call on Mr. Allen to provide this explanation.

Mr. J. C. Allen (Senior Financial Adviser, Department of Energy, Mines and Resources): Mr. Chairman, the personnel field, as Dr. Isbister has mentioned, involves many different classes of employment. If all public servants were full-time the number of public servants on strength throughout the year would be a constant measure of the personnel resource that goes into a program. In fact, we have in our employment, in addition to full-time employees, part-time and seasonal employees.

To have a personnel measurement which is consistent and constant throughout our programs and throughout government we have come up with a concept of man-years in which we count as a unit a full-time position or employee; as four-twelfths of a unit a four-months seasonal employee; and as one-half of a unit a part-time or a half-day employee. The Treasury Board employs this measurement, in addition to its dollar measurements, as a control over departments in the annual authority it gives them to function.

The Chairman: I would now like to open the remainder of the meeting to general questioning. We only have a little over half-an-hour. I am now ready to recognize those who wish to question. Mr. Aiken?

Mr. Aiken: Mr. Chairman, I would like to take the opportunity of offering a critical analysis of the Department in response to the Parliamentary Secretary's statement. Perhaps I might be allowed to make such a statement rather than to ask questions, because I think it is a procedure that is often followed; and there may be others who wish to do the same thing.

In the first place, I think we ought to thank the Parliamentary Secretary for such a broad outline of the departmental responsibilities and Dr. Isbister for explaining the general outline of the department.

It is regrettable that the Minister is not here to open the debate. Although I recognize

the importance of the ministerial mission to South America I really do not know what the Minister is doing there in connection with the Department of Energy, Mines and Resources. I hope he is not just visiting Chile to see if he can move the Queen Elizabeth Observatory down there. That seems to be the general impression of what is happening.

• 1030

I am going to take a few minutes of the Minister, but I will be brief because he is not here. However, we in the Opposition, have tried to catch him in the House at various times for questions, but because of departmental duties, once to the Council of Ministers of Greece now down to South America, often on the days that he was supposed to be there he was away; and on days that he was not supposed to be there he would not be present. I was looking forward, as I think were others, to this opportunity of asking him some questions which I consider urgent. Because he is not here I do not think we should deny ourselves the opportunity of making some comments.

I think the Minister has the admiration of all Members, as a person—he certainly has mine; I am very fond of him—but unfortunately up to the present time he has been saddled, either by government decision over which he has no control, or by personal decision, with a lot of unpleasant duties. These have involved cancelling two major projects of this Department, one the Queen Elizabeth Observatory and the other the ING project, both of which come under his jurisdiction.

I have no doubt these were financial decisions, but they do come within the purview of the Department and I think we should comment on, and regret, the fact that these projects were cancelled without any alternative scientific approaches being put forward by, the Government.

The Minister has also come in for some unfortunate criticism on the furnishing of his office. I notice that this is one of the items—Ministerial Offices. I do not want to follow that up, except to say that it does create the impression of his being more interested in furnishing his office than in looking after his Department.

Mr. Orange: I have seen better offices than his.

Mr. Aiken: Finally, as I say, I cannot understand the reason for his being in South America.

This is a most important Department. In fact, I think it is the most important department of government in this country. It has a broad range, from supervision of atomic energy to our coastal waters and the surveying and mapping and development of our resources. I hope the Minister comes back pretty soon so that I can say some of these things to him directly, but I will leave it at that.

Mr. Langlois: Write him a letter.

Mr. Aiken: I want to turn for a minute to another subject. This Department, as I said, deals with one of the largest and broadest areas of Canadian endeavour. One of the major reasons for its existence is the Water Resources Branch. I say, and advisedly, that the Department was created so that the various areas of resource, particularly water, could be brought into one department and that some order could be brought out of the chaos of government organization that has beset the pollution program or has caused the lack of one.

I thought that the establishment of this Department was a very excellent step and I know that the members of the Water Resources Branch of the Department are doing a tremendous amount of work in trying to bring things together. There is, however, something basically wrong higher up, and that is a failure to break through the terrible mass of red tape that encompasses the pollution-control program and the effort to create it.

Pollution is one of the greatest tragedies that this country is beginning to face, and the attack on it is being blunted, not intentionally but by accident, by a division of jurisdiction between departments of the federal government, between federal and provincial governments, and between provincial and municipal boards and conservation areas, and so forth.

• 1035

The Department cannot start to do a proper job until the Government has set up some type of over-all organization in this country. We are attacking pollution with a clumsy, outdated, over-extended and complicated mechanism which is not working. I am casting no reflection whatever on the Department. They are only one department in a larger picture which has not yet been completed and

is not yet very clear, but the split-up is causing a great delay in meeting this challenge.

For about two years we have been looking for a water act from the Department. I am led to believe, Mr. Chairman, that a water act was drafted as long as a year-and-a-half ago in the Department. I do not know what happened to it. We have never seen it.

We were given to understand that the water act was to be the government's answer to a pollution problem, certainly that of water pollution.

What went on within the Government, or within the Department, those of us on the outside do not know, but unfortunately nothing ever became public. A water act never appeared. So after at least two years of extensive work we are no further ahead on the problem of a co-ordinated pollution-control policy.

The Chairman: Excuse me, Mr. Aiken. You have been speaking for nine minutes. Do you feel you can finish in one minute?

Mr. Aiken: No, I do not, Mr. Chairman. This is a reply to the Parliamentary Secretary's statement. I will try not to—

The Chairman: I am trying to keep you in line with the length of his statement.

Mr. Aiken: Well, I will not abuse the privileges of the Committee, Mr. Chairman. However, I have some things I want to say and this is the time to say them. I will try to contain myself. I am not treating this as a question period. I am commenting.

Mr. Gilbert: Mr. Chairman, if Mr. Aiken is going to set the precedent for members of the Committee of commenting on the statement of the Parliamentary Secretary, it probably should apply to all parties, and the main spokesman for each party should have a "say" before we get into the questioning.

The Chairman: That, in fact, was my intention. I would like to give others an equal opportunity.

Mr. Aiken: That is understandable, Mr. Chairman. I will cut myself short so that others may have the same opportunity today.

The Chairman: I am not suggesting that you cut yourself short, Mr. Aiken. All I am suggesting is that the spokesman for the other parties should have an equal opportunity to comment on the statement by the Parliamentary Secretary.

• 1040

Mr. Aiken: Yes; all right. I will restrain myself.

Mr. Chairman, one of the things I cannot understand about the Estimates, which we will be talking about later, is that at a time when everybody in this country is bemoaning the problem of pollution generally, and water pollution in particular, the water and co-ordination of renewable resources programs, which are the focus—the spearhead—of the attack on water pollution, have had their Estimates decreased by \$3½ million in 1968-69—a decrease which certainly does not indicate that the Government is intending to place a real responsibility on this Department. It may be that this responsibility will appear somewhere else, but it certainly is not in that section. I notice that it is cut back extensively in all its branches.

Even if there were some cohesion in our attack on pollution we really must, to a degree, limit ourselves in this Department to water and soil, because air generally comes under the Department of National Health and welfare. Yet I feel that this is where the problem of the lack of co-ordination of the whole project lies.

We have not yet seen the establishment of any national standards for pollution control.

I am sure there is somebody working on them somewhere. I am sure the National Research Council could develop them, or perhaps this Department could develop them, but they are not developed and they do not appear. We have not seen any co-ordination of research. We have seen no pilot projects develop; it has been mentioned time and again that the Ottawa River is the best possible pilot project—it is an interprovincial river running past the national capital with two provinces involved. But while there have been talks, nothing has happened. I think this is one of the fields that the federal government could very well move into, and set up some pilot projects to show how pollution control in river basins could work.

I just want to say in conclusion that all the pressures in connection with pollution control seem to be coming from outside the federal government, not inside it. We are getting the pressures from the Canadian Council of Resource Ministers, from pollution-control bodies, from provincial departments, from members of the House of Commons on both

sides, pressing the government to do something. I say that the pressure should be coming from within.

I do not want to take any more time; I have some other matters but they will come up as we go along. I feel very strongly about the Water Resources Branch. I cannot see how they should possibly have been cut back in their spending estimates. I am very sorry that we have not seen any real progress in the government setting up a pollution-control program.

The Chairman: I have Mr. Gilbert and Mr. Deakon next.

Mr. Danson: Mr. Chairman, on a matter of procedure. I do not mean to inhibit Mr. Gilbert, but it seems to be putting the cart before the horse to have these statements at this time when we have not had a chance to look at anything. If we are here to score debating points and criticize before we have had a chance to question officials, to really examine the estimates, I think we are wasting a lot of time. I think we could make much better use of our time by going into the questions than in the summary before the passing of the estimates. I am not familiar with the procedures here; I am new. But it seems to me that to criticize things which we have not even discussed and read newspaper reports about is a waste of time. Perhaps this can be explained.

• 1045

Mr. Deakon: Mr. Chairman, that was my point, too.

Mr. Hymmen: Mr. Chairman, since the opportunity was given to Mr. Aiken, a similar opportunity should be given Mr. Gilbert, and probably the representatives of the other parties should be heard.

Mr. Aiken: I think, Mr. Chairman, this is a customary procedure. I see nothing wrong with it. The minister or his assistant makes a general review of the affairs of the department and other people comment in a general way. We will get to the other things.

The Chairman: I might say for clarification that usually these statements are made in brief form at the beginning under Item I. This is why I was asking Mr. Aiken to keep his statement brief. But having given Mr. Aiken the opportunity, I would like to call upon the others for a brief statement before

we get down to questioning. The same procedure is followed in committees as is followed in the House of Commons. Mr. Gilbert.

Mr. Chappell: May I speak for a moment?

The Chairman: Yes, Mr. Chappell.

Mr. Chappell: I would rather not have this time spent on criticism of what is happening here. I would rather we found out what is in these estimates. We have all the officials here this morning, and we are anxious to start questions. If Mr. Aiken and Mr. Gilbert and others are going to spend the rest of this day criticizing the past, I see no reason why some of us, if we wish to do so, should not have the right also. I really think that most of us would prefer to get right at the questioning.

The Chairman: Mr. Chappell, if I may intervene here, we had only half an hour to start with and we will ask our officials to come back with us on Thursday, at which time we can get right into the original questioning. But, if I may, I would like to extend the same courtesy to Mr. Gilbert for a few minutes and then I will call on Mr. Deakon if he wishes to say anything at that time.

Mr. Gilbert: Mr. Chairman, you are quite right that the procedure in the House is that the minister makes his statement and then the leading spokesmen of the different parties make their preliminary statements. I had not expected that we would proceed this way this morning, but it is probably the proper and certainly the usual way. I had not prepared a criticism of the Department. I am going to ask that I be given the privilege of deferring my remarks until the next meeting, and I can assure you that they will be within five to seven minutes.

The Chairman: In order to get right into the questioning at the beginning of the next meeting and carry through, would you, Mr. Gilbert, consent to withhold your remarks until the Minister returns and then you can make them to him? Would this be satisfactory to you?

Mr. Gilbert: I have no objection. I would like to direct them to the Minister.

The Chairman: Because when we meet on Thursday morning, I would like to see us get right into the original questioning.

For the last ten minutes I will recognize anyone else in the Committee who wishes to question any of the officials present. Mr. Danson?

Mr. Danson: I was rather interested in what was mentioned concerning the cancellation of projects, which brings up the question of science policy priorities or planning. When the first description of this Committee was given to me, I thought that included science policy. I am not quite sure yet whether it does or not. I notice there is a committee of the Senate discussing this. It has had some very interesting deliberations and they are well worth reading. But to what extent does this Department and will this Committee deal with science policy and the establishing of priorities?

• 1050

Dr. Isbister: Well, Mr. Chairman, as an administrative official I would like to plead that some of the questions pertaining to the selection of priorities, in fact the major questions, are usually dealt with at the ministerial or cabinet level. Many of these questions of the actual selection of projects—the approval of major programs—are decisions of policy and matters for which the government itself assumes responsibility. So that the most meaningful of these questions are properly dealt with by the Minister rather than by the administrative officials.

There is really a great deal going on in the government organization—in the Treasury Board, in our Department of Energy, Mines and Resources and in other departments that have heavy scientific research projects. This is being focussed in public now by the Senate Committee on science, and there is really a great deal of thinking and planning, accompanied already by some action, to put the government into a far better position—the government machinery into a far better position—for the future than it has been in the past, to select and establish program priorities including scientific ones on a far more rational basis.

It is not many years ago that one simply lacked the basic information with which to analyse some of these important questions. Today we are increasingly getting to the point of being able to consider some of these matters in terms of contemporary concepts of benefit cost analysis and so forth. And the public accounts themselves—the form of departmental budgetary accounts, is being changed in radical ways to enable those of us who administer departments to have more meaningful assemblies of information with which these very problems can be considered.

The Chairman: Thank you, Dr. Isbister. The next name I have on my list is Mr. Hymmen.

Mr. Hymmen: Mr. Chairman, I know we have only a few minutes left but I would like to make a comment or two in regard to Mr. Aiken's remarks.

First, while I may appear to defend the government and the departmental officials on occasions, I will certainly reserve the right to be as critical as I wish to be on any particular item. I want to put on record that I think Mr. Aiken's continual reference to the quarters of the Minister is very picayune and not worth all the national publicity it has been given.

Now the other thing is this. As has been pointed out by others more eloquently than I, as long as we have the British North America Act the responsibility for water control and water pollution rests with the provinces. Until that Act is changed I think we had better live with it. But perhaps for the benefit of members of this Committee—I know I would be very interested—Dr. Isbister or Dr. Prince could give us briefly, or in a more detailed manner at one of our other meetings, a summary of the legislation presently in effect in the various provinces on water control measures.

Mr. Sulatycky: Might I ask whether or not the Department has any power of suggestion to other government departments in regard to water pollution? I might point out to the Committee that there are a few municipal areas in this country which are entirely within the jurisdiction of the federal government. I am thinking in particular of Banff and Jasper.

The Chairman: Excuse me, Mr. Sulatycky, your Chairman has erred here. We agreed on having no supplementaries on the first round. Actually the next name on my list is that of Mr. Deakon. Would you mind standing down and I will put you next on the list.

Mr. Deakon: I was wondering whether the Deputy Minister could advise us whether any other departments, of the federal government—I was thinking mainly of the Department of Health and Welfare—have appropriations or amounts set aside for the purpose of controlling water pollution?

Dr. Isbister: Mr. Chairman, there are quite a large number of government departments and agencies whose programs pertain to water pollution in some way or another. I would just like to say once that I regret very much that we are saddled with this word "pollution". I wish that our Department worked on water purification, but it is pollution we work on.

• 1055

The Department of Energy, Mines and Resources, by decision of the government, has been given the responsibility of coordination of the federal government programs. That does not mean that an effort is being made to place all water management and water pollution programs in the Department of EMR. It does mean that for the first time a focal centre of analysis, of coordination, of policy advice and decision has been created in the Department. The Department makes an effort, with increasing efficiency, to be familiar and current with the pollution programs of all the federal government departments and provincial departments and others in the country. I forget the precise figure but there are some 20-odd government departments that touch pollution in one way or another.

Mr. Deakon: Would that mean you have funds allocated?

Dr. Isbister: Yes, indeed, sir.

The Chairman: Gentlemen, I think that is all the time we will be able to spend this morning. There is another Committee sitting in this room at 11.00 a.m.

I declare the meeting adjourned.

OFFICIAL REPORT OF MINUTES
OF
PROCEEDINGS AND EVIDENCE

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Translations under the direction of the Bureau for Translations, Secretary of State.

ALISTAIR FRASER,
The Clerk of the House.

Publication
3

HOUSE OF COMMONS
First Session—Twenty-eighth Parliament
1968

STANDING COMMITTEE
ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE
No. 3

THURSDAY, OCTOBER 31, 1968

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources

WITNESSES:

From the Department of Energy, Mines and Resources: Dr. C. M. Isbister, Deputy Minister; Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J. P. Drolet, Assistant Deputy Minister (Mineral Development); Mr. J. W. MacNeill, Assistant Deputy Minister (Water); and Mr. J. C. Allen, Senior Financial Adviser.

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and Messrs.

Aiken,
Beaudoin,
Chappell,
Comeau,
Danson,
Deakon,
Gilbert,

Grills,
Harding,
Langlois,
Marchand
(*Kamloops-Cariboo*),
Moores (*Bonavista-
Trinity-Conception*),

Orange,
Ricard,
Ritchie,
Roy (*Timmins*),
Serré,
Sulatycky—(20).

M. Slack,
Clerk of the Committee.

MINUTES OF PROCEEDINGS

Thursday, October 31, 1968.

(3)

The Standing Committee on National Resources and Public Works met this day at 9.55 a.m. The Chairman, Mr. Leonard Hopkins, presided.

Members present: Messrs. Beaudoin, Comeau, Deakon, Gilbert, Grills, Harding, Hopkins, Hymmen, Langlois, Marchand (*Kamloops-Cariboo*), Orange, Ricard, Ritchie, Roy (*Timmins*)—(14).

Members also present: Messrs. Crossman, Cullen and Duquet.

In attendance: From the Department of Energy, Mines and Resources: Dr. C. M. Isbister, Deputy Minister; Mr. J. W. MacNeill, Acting Assistant Deputy Minister (Water); Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J.-P. Drolet, Assistant Deputy Minister (Mineral Development); Mr. G. M. MacNabb, Assistant Deputy Minister (Energy Development); Mr. J. C. Allen, Senior Financial Adviser; Mr. R. B. Code, Senior Personnel Adviser.

On motion of Mr. Deakon, seconded by Mr. Harding,

Resolved,—That the Committee seek permission to sit while the House is sitting.

The Committee resumed consideration of the Revised Estimates (1968-69) of the Department of Energy, Mines and Resources.

Copies of a document from the Science Council of Canada, entitled "Report No. 4—Towards a National Science Policy for Canada", were distributed to members of the Committee.

On Item I, Departmental Administration, Dr. Isbister was examined on various aspects of the Department of Energy, Mines and Resources, assisted by Messrs. MacNeill, Harrison, Drolet and Allen.

The examination of the witnesses still continuing, at 11.00, the Committee adjourned until 9.30 a.m. on Tuesday, November 5.

M. Slack,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Thursday, October 31, 1968.

● 0955

The Chairman: Gentlemen, I see a quorum. I would like, first of all, to ask for a motion to give this Committee permission to sit while the House is sitting.

Mr. Deakon: I so move.

Mr. Harding: I second the motion.

The Chairman: Moved by Mr. Deakon and seconded by Mr. Harding. Is it agreed?

Motion agreed to.

The Chairman: We have the French translation of the departmental pamphlet on estimates with us this morning. Is there anyone here who desires a copy of that who does not have one at the present time?

Mr. Duquet: I have it.

The Chairman: You have it. We have also this morning the Report No. 4 of the Science Council of Canada. Is there anyone who does not have a copy of this in front of him? I thought you would be interested in that.

When we adjourned on Tuesday we had some questions outstanding before the Committee, but I do not see either gentlemen present this morning who had questions before us. Are there any other questions of a general nature out of the statement that was delivered that anyone would like to ask at this time?

Mr. Hymmen: Mr. Chairman, as a point of interest I believe I did ask Dr. Prince for some information. I know it is probably not possible to give it in short form as there may be some more detailed information on legislation presently in effect in the provinces on water control.

Mr. Orange: Mr. Chairman, on a point of order here. The other day before we concluded there was some

discussion regarding giving an opportunity to the other parties to make statements. . .

An hon. Member: That is right.

Mr. Orange: . . . and I am just wondering if they want to do it now or in the meeting? I see the time is sort of fleeting on us.

The Chairman: Well, Mr. Gilbert consented the other day to deliver his statement when the Minister appears before the Committee; I believe this is still his desire?

Mr. Gilbert: Yes, you are right, Mr. Chairman.

The Chairman: I believe that same opinion applies to Mr. Beaudoin. Am I right?

Mr. Beaudoin: Yes.

The Chairman: Right. Mr. Hymmen.

Dr. C. H. Isbister (Deputy Minister, Department of Energy, Mines and Resources): Excuse me, Mr. Chairman, might I say that Dr. Prince attended the former meeting representing Mr. MacNeill, who is the Acting Assistant Deputy Minister this year in the water sector. He is present this morning on my right, and he can pick up questions that were addressed last time to Dr. Prince.

The Chairman: Thank you, Dr. Isbister.

Mr. Ritchie: I have some questions on the . . .

The Chairman: Well, Mr. Ritchie, I have your name down. I am willing to recognize others who have their hands up, and I will recognize you next. Mr. MacNeill.

Mr. C. E. MacNeill (Acting Assistant Deputy Minister, (Water); Department of Energy, Mines and Resources): Mr. Chairman, with regard to Mr. Hymmen's question, there are two documents which we could make available to Mr. Hymmen and other members of the Committee who may be interested in

them. One is a recent survey of water resource administration in Canada published by the Canadian Council of Resource Ministers. It was prepared in co-operation with the federal government and the provincial governments, and it provides in capsule form a very good summary of the administrative framework for water management in Canada.

The second is a document prepared as a public service a couple of years ago by CIL. It is a compendium of federal and provincial legislation in Canada relating to water pollution. I am confident that we have sufficient copies of the second document on hand to provide all members of the Committee, and I am sure that in fairly short order we could get a sufficient number of copies of the first document.

• 1000

Mr. Hymmen: Mr. Chairman, I realized when I asked this question at the first meeting that it was a subject which would take time allocated to many meetings. I think the suggestion Mr. MacNeill has made will certainly give this Committee some important background information, and I trust that the Clerk can arrange to obtain the material which is available.

The Chairman: Thank you. Mr. Ritchie?

Mr. Ritchie: I would like to ask some questions on the Queen Elizabeth telescope, but I am not sure if this is the proper time to do so?

The Chairman: Yes, you may.

Mr. Ritchie: Well, it is of considerable interest and has been given as one of the projects which has been cut back in the general over-all science project, presumably it was considered somewhat expensive.

I would just like to ask if there is any chance of reviving this project?

Dr. Isbister: Mr. Chairman, I cannot add to what has been said in the public statement made about the termination of the Queen Elizabeth project except in one respect, and that is, that since then one or two ministers have indicated, in correspondence with private astronomers, that the government is willing to study alternative possibilities.

Mr. Ritchie: In line with that I believe there was a newspaper report that a private group might be interested, have they made any representations to your Department? There was a newspaper report that a group of private people might be interested.

Dr. Isbister: Yes.

Mr. Ritchie: Have they made any representations to your Department?

Dr. Isbister: The answer sir, is that there have been informal contacts with this group. The astronomers and scientists in the Department are aware of the interest of this group, but formal representations have not yet been made to the Department by or on behalf of the group. We have been expecting them.

Mr. Ritchie: Continuing further along this line, it has been said the Department was attempting to dispose of the mirror blank and polishing machine purchased at \$1.5 million. Has the Department been able to dispose of these yet, would you know?

Dr. Isbister: I have decided, sir, that my duty does not impel me to try to dispose of the mirror blank until this group of private astronomers have had some opportunity to see what they can do. So the capital assets that have been assembled for the telescope remain in the hands of the Department for the present.

Mr. Ritchie: Has any of the work that is being done, for instance, I believe a road is being constructed which will be of some use—will any other of the instruments, equipment, and so on be of value in the Department, or are they pretty well lost at the moment?

• 1005

Dr. Isbister: It is really too soon to give a meaningful answer to this important question, Mr. Chairman. There are various assets pertaining to the blank itself, for example, the machinery and so forth for polishing the blank. The future of these assets depends on the future of the blank itself. There are some other pieces of astronomical equipment which have been assembled at or for the Mount Kobau site which are of continuing usefulness in any astronomical program. I do not wish to avoid this or any other question, but it is the view of the astronomers in our Department that it is too early to speak about the value of these assets until it is clear what sort of plan may be made for the use of the Mount Kobau site itself.

Mr. Ritchie: In other words, the Department still is interested and may have plans for the use of this site along these lines, is that correct?

Dr. Isbister: Yes, there are some possibilities and some definite plans for uses of the site which are minor in comparison with the big telescope. This, however, is the best observing site in Canada and since it is there it will be used. We know now of one or two uses to which it can be put, and people are seriously studying other possibilities.

This involves rather complicated planning; it involves consultation with universities, the private astronomers in universities in Western Canada. I expect it will be a few months before we can respond as meaningfully as we intend to the question you are raising now.

Mr. Ritchie: Further the report states that approximately \$4.5 million has already been spent and that it was necessary to spend another \$8.5 million over a period of seven years to bring this into operation. It seems as if having spent all this money we might have carried the project forward to fruition. Would you care to comment on that, and what we save? Or do we lose by not going ahead? I know everyone has to have priorities but maybe we would have gained a lot too.

Dr. Isbister: Yes. Well, with respect, Mr. Chairman, on this question I do not feel that I can add to what has been said on behalf of the government in the public statement that was made. The termination was based on reasons of economy.

Mr. Ritchie: There is another comment that interested me. I understand Chile was seriously considered, and I was interested in the scientific aspect of why we would choose a southern hemisphere and if it would give a great deal of added knowledge, or what have you?

Dr. Isbister: Mr. Chairman, no choice has been made of a site in Chile. It is an interesting fact that in recent years, astronomers throughout the world have become interested in Chile as undoubtedly providing the best conditions in the whole world for astronomical viewing. Astronomers in Canada along with others, have expressed interest in taking advantage of Chile for the pursuit of their science. However, there has not been any choice or decision made by the government about such an idea.

Mr. Ritchie: Would you care to say in a general way what astronomy does for us as a nation, or is it a pure science, as it is called or an indigenous science, or does it have a practical application? Is this particular telescope or project just gathering information?

Dr. Isbister: Yes. This question, sir, is well over the head of a non-scientific Deputy Minister, and I am going to ask Dr. Harrison to pick it up because his views on this are far more valid than mine.

Dr. J. M. Harrison (Assistant Deputy Minister, Mines and Geosciences, Department of Energy, Mines and Resources): Thank you very much, Dr. Isbister.

Actually astronomical research is probably the more curiosity oriented than most kinds of research that are undertaken in a department such as ours, nevertheless it does have an important bearing on the activities of the Department and an understanding of the earth itself.

Astronomy is directed towards an understanding of the universe, and of course, this planet Earth is a distinct part of that universe, and a better understanding of the universe itself helps us to understand better the earth on which we live. In the very long run possibly it has factors which are going to be significant for the exploitation or exploration for materials on the earth. However it is more oriented towards satisfying the curiosity of scientists and other people in the world. I expect one of the most attractive sciences to the layman I think, is the study of the universe itself.

• 1010

Mr. Ritchie: Mr. Chairman, I do not want to monopolize this. Have I time for one more question.

The Chairman: You do, yes.

Mr. Ritchie: There was some comment that a delegation from Saudi Arabia was interested in some sort of project like this and it might have been of some advantage to us as a nation to train these people and so on. Have you any comment on this?

Dr. Isbister: Mr. Chairman, in connection with the planning, designing and engineering of the Mount Kobau complex, including the telescope and the related facilities at other sites in Vancouver and Victoria, we have assembled as consultants a group of private engineers who have worked in relation to our departmental scientists. This group has achieved considerable repute in its field and we have been hopeful that one of the by-products of having this expertise assembled in an available package in Canada may be that other countries will seek to make use of it. If so, the exportation of this kind of planning skill, will be a fringe benefit to Canada. We are aware of the interest in the particular country to which you refer. There are

one or two other possibilities as well. This is what happens when you assemble a package of expertise here which does not exist elsewhere. Quite often there are financial and other fringe benefits that were not expected at the beginning.

Mr. Ritchie: Now that the project has been dropped will this expertise dissipate?

Dr. Isbister: Will it disappear?

Mr. Ritchie: Dissipate—that is, will it be so spread that it will not be of much interest?

Dr. Isbister: This, Mr. Chairman, will depend in a large part on the answer to the first question. If this group succeeds in finding customers for its talents then it will not be dissipated but if it does not succeed then it will. It is a very specialized field.

The Chairman: Mr. Ritchie, I could put you on the second round, if you would like.

Mr. Ritchie: That is fine for now.

The Chairman: Mr. Comeau.

Mr. Comeau: I have a couple of questions, Mr. Chairman. I am wondering, sir, whether there is a water act in process of preparation and, if so, whether you have any idea when this would come before Parliament.

Mr. MacNeill: Mr. Chairman, the answer to the question is that a Canada water act, as noted in your background document, has been under consideration for some considerable time. I believe that reference was made to the proposed Canada water act in at least two Throne Speeches in the last year and a half. The Canada water act has not been brought forward, I suppose, for a number of reasons—the Parliamentary calendar being one, and it is not possible for us to anticipate when the Canada water act might be brought forward. This is a matter of government policy which is in the hands of the government and of the House.

Mr. Comeau: I believe that the Department was represented by the Minister at the Council of Resource Ministers in Halifax. Can you give us an idea what decision or recommendation was made on the question of water pollution, for example, and has any announcement been made following this meeting?

• 1015

Mr. MacNeill: Mr. Chairman, here again, prior to the second last meeting of the Council of Resource Min-

isters, indeed following the November 1966 conference on Pollution in our Environment in the City of Montreal which came shortly after the establishment of the Department and just prior to the establishment of the water sector in the Department, we gave serious consideration to the whole question of water pollution policies and water pollution programs—federal and joint federal-provincial programs.

A number of proposals for federal-provincial programs in the field of anti-pollution were laid before the provincial resource ministers meeting in Ottawa in May, 1967. These proposals were considered by the provincial resource ministers and the provinces agreed to take them under advisement, to consider them, and to respond in due course. This question was on the agenda again at the last meeting of the Council of Resource Ministers in Halifax, which I think is the meeting to which you refer.

Mr. Comeau: Yes.

Mr. MacNeill: Further discussions were held and again the provinces agreed to take certain parts of their recommendations under advisement and to respond at the next meeting of the Council of Resource Ministers. I should mention that the recommendations that were laid before the provincial resource ministers assembled at the Council covered a lot of matters and progress has been made on some of them. Some of them are still being considered actively.

The Chairman: Our next questioner is Mr. Gilbert.

Mr. Gilbert: Mr. Chairman, I have a general question for Dr. Isbister. What co-ordination, if any, does your Department have with the Department of Industry, Trade and Commerce?

Dr. Isbister: In general, sir, or in a particular field?

Mr. Gilbert: In general to begin with, Dr. Isbister.

Dr. Isbister: In general, there is very close co-ordination between the mineral development area of our Department represented here by the Assistant Deputy Minister, Mr. Drolet, and the people in Trade and Commerce who are interested in the promotion of external trade in metals and processed ores and minerals.

Trade and Commerce turns to our Department in general for information knowledge about mining and related industries. Trade and Commerce has its own responsibility for the active promotion of exports. Sometimes it is difficult to draw a precise dividing line

between these two and, in fact, the two departments co-operate closely in a range of activity which goes more from whites to greys, rather than a black and white division of labour, but in that field never a week goes by without active consultation at different administrative levels between responsible officers of the two departments.

• 1020

In another field, the very specialized field of oil and gas—petroleum exports, the Department of Energy, Mines and Resources has a general responsibility of co-ordination of policy advice for the Government in the entire field of energy, which certainly includes oil and gas. The National Energy Board works closely with us on the side, reports to the Minister of Energy, Mines and Resources, though not to the Department. The working relations there are very close. And between these two groups and Trade and Commerce, about which you were asking, again Trade and Commerce comes in helpfully and actively sometimes when the export promotion aspects become important, and Trade and Commerce is kept informed of developments up to the level of marketing relative to oil and gas; and, as is necessary, comes in and plays its part.

There may be other areas that I am forgetting and, if so, excuse me, but these are two leading examples of co-ordination or liaison between the two Departments.

Mr. Gilbert: Dr. Isbister, probably Mr. Drolet could answer this more specific question. Last year there was a shortage of nickel for secondary manufacturers in Canada.

Mr. Isbister: Yes.

Mr. Gilbert: The complaint was that a great deal of the nickel was being shipped to the United States, thereby causing a shortage to secondary manufacturers here. Has your Department, or Mr. Drolet, participated in any policy decisions on setting up priorities and restricting exports?

Mr. J.-P. Drolet (Assistant Deputy Minister, Mineral Development, Department of Energy, Mines and Resources): Thank you, Mr. Isbister.

Yes; you are right in your description of the situation. For a while, in the field of nickel and other metals—copper in particular—because of the high prices paid for these metals on offshore markets, and also in the United States, there came a time during which certain of our manufacturers in Canada—

consumers of nickel and copper—were obliged to buy at very, very high prices or go to what we usually refer to as the “black market” to get the metal.

In such a case the Department of Trade and Commerce is responsible for correcting the situation and they call us because we are in direct contact with the producers and we know what resources are available.

In turn, we talk to all the various producers and we sit on committees formed of people from the Department of Trade and Commerce, from the Department of Energy, Mines and Resources and also from the producers of these minerals in Canada; and this situation that you refer to has been corrected.

Mr. Gilbert: Was it corrected by legislative action or by persuasive action?

Mr. Drolet: It was not corrected by legislative action because such action would call for imposing controls. In our country we do not like this word “controls” because it recalls certain wartime controls. We do that by persuasion and we have found no problem with that.

Mr. Gilbert: Perhaps I should direct my next question to Mr. MacNabb. It deals with a national oil policy.

There have been reports that there has been a sharp reduction in our exports to the United States, Mr. MacNabb. What part does your Department play in setting up guides and priorities in relation to this national oil policy.

Mr. Isbister: Perhaps I might take this question in Mr. MacNabb's place, Mr. Chairman.

Mr. Gilbert: Certainly.

Mr. Isbister: The administration of the national oil policy, properly so-called, is in the hands of the National Energy Board. With respect, may I suggest that this question could more usefully be put to Mr. Howland, the Chairman of the Board, and his associates, who I have no doubt will be appearing before this Committee.

• 1025

I might add that there is an interdepartmental committee on oil and gas which includes representatives of our Department, but as the administrative responsibility for the national oil policy—which is really the marketing of Canadian-produced gas and oil—is in the

Board I think it would be better to have them answer these detailed questions.

Mr. Gilbert: Dr. Isbister, are you suggesting that the administrative core determine the national oil policy?

Mr. Isbister: No, sir, I am not; it is merely that this is a very moving and changing picture, and we all turn to the National Energy Board in the government administration as the best source of information on the subject. I am suggesting that you will probably find it the best source, as well.

Mr. Gilbert: The problem we face is that there is a sharp reduction in oil export, which has happened just recently.

What was the guiding principle in determining the cutback on exports? I would like to ask that of the person who helped to develop this principle. I doubt that it would be the administrative officers who did it. They would probably direct the policy once it was formulated.

Mr. Isbister: Yes, sir. Well, it is my advice to you that Dr. Howland is in the best position to respond to these questions. I do not wish to withhold anything from the Committee, but as he is appearing. . .

Mr. Gilbert: That is quite all right.

Mr. Isbister: . . . I am sure you would be far better satisfied if you pursued this subject in his presence.

Mr. Gilbert: I have just one further question, Mr. Chairman, which I propose to direct to Mr. MacNeill.

I recall that last year, when the Minister, Mr. Pepin, made his statement in the House, he said that a basic requirement in the establishment of water policies for action was the setting of guides and priorities. Can you tell me what guides and priorities have been set relative to determining a national water policy?

This is my first time on this Committee, and I lack the experience that probably many of you have, but I get the uneasy feeling that our national water policy is rather floating in the air and that we are not coming down with any basic guiding principles. I would like to hear from somebody who could straighten me out on this.

Mr. MacNeill: Sir, I take it that you are referring to general guides and priorities?

Mr. Gilbert: That is right.

Mr. MacNeill: You are not referring to water quality standards but to specific objectives? Is that right?

Mr. Gilbert: You are quite right.

Mr. MacNeill: Perhaps I could make one or two general comments on your question.

The water sector, as I mentioned a few moments ago, was established a little more than 18 months ago, on January 1, 1968. Since then we have been proceeding as rapidly as our professional and other resources would permit. We are moving ahead, on several different fronts.

We are talking about a very, very broad area here. I will mention a few headings and perhaps now, or later, the Members of the Committee may wish to examine some of them.

We moved ahead first of all with the organization of the sector. We have had to clarify our own goals and functions, translate these into programs and organization structure, re-organize existing units and start recruiting new staff. Secondly, we have had to undertake a preliminary—and I would underline the word “preliminary”—identification and assessment of the major emerging problems and issues in the field of water in Canada. It is no small task but we have had to do this and we will be continuing to do this to provide ourselves with some idea of national and regional priorities in this field. I may say that we are being assisted in this by earlier studies and studies by other bodies, such as the recent annual reviews of the Economic Council of Canada.

A third area that has occupied us is again the identification and the evaluation of the more significant factors that should underlie any national water policy in Canada. What are the major factors in Canada that have to be recognized and respected? Some of the more general and perhaps more obvious ones are the nature of the resource itself, the complexity of the problems that we are facing the interrelationships between uses, between resources and between goals. The jurisdictional framework is very complex. We have had to study that. There is the need for different approaches and we have settled on a comprehensive approach to water policy, water planning and water management, which of necessity—given a situation of divided jurisdiction—is a joint federal-provincial approach.

I could go on to mention reviews of legislation. Reference was made earlier to the Canada Water Conservation Assistance Act, which has been under con-

sideration, and the preliminary development again of a number of new programs, both federal and federal-provincial, by which we hope to respond to some of these identified problems. There are five or six different general areas that he might want to pursue.

Mr. Gilbert: One short question, Mr. Chairman. Mr. MacNeill, there are really two basic problems in this area of determining a national water policy. One is the inventory of the water and the other is the demand. How far have you progressed in these two specific areas? When can we expect some definite statement with regard to the completion of your work concerning inventory and demand?

Mr. MacNeill: Mr. Chairman, these are two very significant areas; the inventory of our water resources and the future demand for our water resources. With regard to the inventory of our water resources first, the initial hydrometric networks were established in Canada around the turn of the century and these have been built up gradually over the years, until today we have in excess of two thousand stations spread all over Canada, mainly in the developed parts of Canada, measuring flow and other parameters. These networks are very expensive. They require a large input of professional and technical resource to design, operate and maintain, and they are being expanded. We have plans for their expansion. They are being expanded as rapidly as our technical and financial resources will permit.

When you look at the over-all picture you find that we are far better served at the moment, and will be for some time to come, with information on the supply side of this equation than we are with information on the demand side. On the demand side, frankly we have very little information about existing water uses in Canada—I am talking about existing water uses—either on a regional basis, a basin basis or a national basis, and these problems are basin problems and regional problems before they are national problems. We have to develop—and we are pursuing this but it is a very complicated matter—a new systems for the collection assembly and compilation of information on water uses.

• 1035

With regard to future water demands, we have initiated and are initiating more studies to come up with broad macro-estimates of future water demands on a regional basis. The refinement of this will be a continuing thing and to be done well it will have to be done on a river basin basis, on the basis of regions such

as the Fraser River region or the Yukon or the Okanagan or the Saskatchewan-Nelson. These kinds of demand estimates, based on rather detailed economic studies, forecasts and what have you, can best be done within the framework of comprehensive planning studies. We are trying, and with some success, to get comprehensive planning studies under way in our major basins. The Saskatchewan-Nelson is going ahead—that is basically a supply study at the moment—also the northern Ontario water study and in a very few months we will have completed a major study of water resources in the Atlantic region. The Fraser River is underway and we are discussing with the provinces a number of other basin studies.

This is a big question you have asked, sir, and it is not one that is going to be answered quickly. It is going to be answered gradually over time. And it will never be completely answered because of the fact that we are in a very dynamic situation with respect to population, industry, and so on. The uses are continually changing and expanding.

Mr. Gilbert: Is there any present intention to export our water to the U.S.?

Mr. MacNeill: No.

Mr. Gilbert: No. Many thanks for your answer.

The Chairman: Thank you, Mr. Gilbert. Do you have a point of privilege or order, Mr. Langlois?

Mr. Langlois: We will say it is a point of order. Are there any studies underway or contemplated for the Province of Quebec?

The Chairman: Mr. Langlois, I will put you on the list for that question. I have Mr. Deakon and Mr. Roy, and I will put you down as next on the list because we agreed there would not be any supplementaries and I would like to keep them in order, Mr. Deakon?

Mr. Deakon: Mr. Chairman, my friend mentioned Quebec but the question I wish to pose to the members of the Department pertains to the suggestions and proposals that I understand have been made for a pilot project in the Toronto area regarding pollution. As we all know, the cities bear the biggest part of this pollution problem, and I understand that certain representations have been made by Mr. Tony O'Donohue, who is an engineer and a councillor, an alderman for the City of Toronto, and others with reference to a pilot project to be initiated on the Toronto waterfront. I do not know if you know the

area, but it is from the Boulevard Club to the mouth of the Humber River. It is along the shoreline there and opposite the Seaway Hotel. It was proposed that they pump the water out from the breakwater to the shoreline, block off the breakwater and make it an enclosed area, and then place purified water in this area by possibly placing aeration lines underground, which I understand is an experiment being conducted in Sweden. This was reported in the *Engineering Digest* the middle of this year. The purpose of this is to keep the water clean at all times, and this would provide a place for play and provide swimming facilities for people in the Toronto area. I do not know whether you gentlemen realize it, but if you went down to this area on a Saturday or Sunday it resembles sardines, the people are packed in there like you have never seen before. I was wondering whether the Department has contemplated or considered this project?

• 1040

Mr. MacNeill: Mr. Chairman, I must admit that I am not personally aware of the private project that has been referred to. I take it this is a suggestion for a pilot project that has originated in Toronto. Proposals for pilot projects have been made. I referred a while ago to a number of proposals that were laid before the provincial resource ministers in May of 1967. One of them was a proposal under which the federal government would enter into agreement with any province to undertake the preparation of comprehensive basin plans, the cost of these studies to be shared between the federal government and the province or the provinces involved in the given basin. To get this approach under way, because we are dealing with quite a new approach—comprehensive framework planning is new not only to Canada but throughout North America and we have a lot of experimenting to do within this approach—the federal government indicated that it would be prepared to pay the full cost of a pilot study in each region, the areas selected for pilot studies meeting certain conditions regarding the complexity of the problems, the interrelationships of the uses concerned, the intra-jurisdictional nature of the basin and so on.

Discussions have been under way for some time with different provinces in respect of possible pilot studies but I am not personally aware, to come back to my point of departure, of the one suggested by the gentleman.

Mr. Deakon: To your knowledge, have any of these provinces or any of these regions accepted such a proposal by the federal government?

Mr. MacNeill: As of this point of time no agreement has been reached between the federal government and a province on a pilot study; as of this point in time discussions are under way with several provinces.

Mr. Deakon: Is Ontario one of those provinces?

Mr. MacNeill: With respect to active discussions, no.

Mr. Deakon: Would you consider the Toronto area, the area I refer to as a regional area, eligible for this sort of assistance?

Mr. MacNeill: As I said, sir, there were certain criteria implied for the selection of the basins and these related, to repeat myself, to the complexity of the uses, the size and scope of the problem area and the intra-jurisdictional nature of the problem. In the case of Toronto, you are dealing with a very small component. It is a very large area, I grant you, in terms of population and in terms of the problems that you have discussed but, geographically, it is a small component of the Great Lakes basin and really from the national point of view and from the federal point of view our primary concern at the moment is the entire Great Lakes problem, and we are focussing a great deal of our resources on it through the Burlington centre, which was mentioned the other day, and in other ways. In terms of national interest and national priorities, without in any way discounting what you said about Toronto, the Great Lakes as a whole presents the greatest interest.

Mr. Deakon: Thank you, Mr. MacNeill.

Mr. Roy (Timmins): Mr. Chairman, since we do not have an agenda may we question on anything?

The Chairman: Yes, you may.

• 1045

Mr. Roy (Timmins): Are we considering estimates right now or policy?

The Chairman: You may ask any questions you wish on the Department at this time.

Mr. Roy (Timmins): Then I have a question on the estimates. In addition to the \$30 million in salaries in the expenditures there is close to \$6 million in professional and special services. Because of the large amount involved could I ask what comprises these special services?

Dr. Isbister: Would you make a statement on that, Mr. Allen?

Mr. J. C. Allen (Senior Financial Adviser, Department of Energy, Mines and Resources): Mr. Chairman, we do not have here in one place the details for the full \$6 million of professional and special services which I presume is a figure Mr. Roy has come to by adding up the details at the back of the book. Whether you wish to take the time of the Committee for us to call out and speak to each one or whether it would be better for us to take that question home and prepare an answer for the next meeting is the question that comes to my mind, Mr. Chairman.

Mr. Roy (Timmins): I would certainly appreciate having a prepared detailed study of the different portions of it but I wonder if you might not just make a broad statement on general policy regarding professional and special services. Why is such a large amount involved? Do you not have the staff in your Department to look after these services?

The Chairman: Before Mr. Allen answers, Mr. Roy, I would ask Dr. Isbister if they would be willing to prepare such a report for the Committee.

Dr. Isbister: Such a report certainly can be prepared, Mr. Chairman, and will be for the next meeting.

Let me try to deal with the general question that was raised. I would suggest that perhaps if this leads to further concrete questions they might best be discussed in connection with the actual detail that will be brought forward. In very general terms, no, sir the Department does not try to staff itself to provide all of the services that it needs. It would not be economic to do so. The administrative duty of the Department is to get the best "bang" for a buck, if I may use that phrase—sorry, it is a bad phrase except in the Defence Department—to get the best results for its tax dollar spent. Very often a highly specialized, technical and scientific department such as ours requires specialized services in addition to what can be found among our own personnel. It might be quite wasteful to keep every conceivable kind of expertise on our staff merely knowing that occasionally it would be useful, so that we are quite often in the market-place to retain specialized services. An attempt is made, I can add, to make an economic calculation and if the service is a continuing one which can best be supplied then we will try to staff up to it. If it appears to be an ad hoc service that is far better available, say, from some private professional consultant then we will tender and try to get the lowest bid for a specified piece of work from outside.

One other general comment on this field is that for the past couple of years government departments in general, and ours in particular, have been under very severe budgetary pressures and, as the members of the Committee well understand and as the House of Commons is well aware, we are simply not able to staff up as much as our own internal planning would lead us to do—I am not complaining about this but merely mentioning it. So that in this kind of period of budgetary stringency there is an increased number of cases in which branches of the Department wish and will wish to contract for outside services. But again, the question of how much of this can be done in total is itself a matter of budgetary constraints. I just mention this.

• 1050

The Chairman: Mr. Allen.

Mr. Allen: I will just run through the Blue Book, Mr. Chairman, to find where most of the \$6 million Mr. Roy was speaking about exists. The two major items are the \$1.8 million in the geological survey, to which I am sure Dr. Harrison would speak, and \$1.4 to \$1.5 million on inland waters to which Mr. MacNeill could give the best reply.

Dr. J. H. Harrison (Assistant Deputy Minister, Department of Energy, Mines and Resources): Mr. Chairman, if I may, as far as the geological survey is concerned we have a federal-provincial aeromagnetic survey. Jointly with some of the provinces we have had this going on for several years and something on the order of \$1 million was paid out for contractual services in that connection to the aerial surveying industry.

Mr. Roy: Yes.

Dr. Harrison: Other specialized services are purchased from time to time, for example, identification of particular kinds of fossils from drill cores, for a potentially oil bearing country or for special advice on particular kinds of apparatus that a group may be wishing to purchase.

Mr. MacNeill: Mr. Chairman, with regard to the amounts provided under this particular vote for marine sciences, inland waters policy and planning we have a number of service contracts and I would appreciate holding this over until our next meeting.

The Chairman: I would like to ask the gentleman. . .

Mr. Roy: I would appreciate getting the material printed, Mr. Chairman.

The Chairman: Agreed?

Mr. Roy: I see in the literature that part of the Department's responsibility, I think—I am speaking of mining—involves research or help to some groups or corporations or are bodies for the development of new methods of mineral extraction from ore. Is this a service of the Department, Mr. Drolet?

Mr. Drolet: That is the Mines Branch, Dr. Harrison.

Dr. Harrison: We do not, except under special circumstances, undertake scientific service work for a company. We try to develop mineral methods which can then be applied by the various companies in the specific kinds of ore problems that they have. To this end the Mines Branch does provide, if you like, basic service to the whole mineral industry in longer range types of applied research studies. This is what is meant by service to a particular company.

Mr. Roy: Do you wait for particular request from the industry or would you act on particular requests from someone having a problem?

Dr. Harrison: In all these kinds of programs, sir, the programs initiate in various ways. Sometimes they are requests from industry for fundamental information, other times they are generated by people who see that there are certain gaps in technology, for example in mineral extraction; several of this kind of thing; improving recovery of metals from ores of all kinds; this is the sort of thing.

• 1055

One of the things, for example, developed several years ago in the laboratories in the Mines Branch was the basic process used for extracting uranium from the ores at Elliot Lake. This was not done for a mine; this was done for the industry and in conjunction with the industry.

Mr. Roy: This is just a scientific study. . .

Dr. Harrison: This is not just scientific, it is the practical application of it; the application of the scientific and technical. . .

Mr. Roy: Feasibility.

Dr. Harrison: . . . feasibility.

Mr. Roy: Feasibility is part of the study?

Dr. Harrison: Pilot plant; we do quite a lot of pilot plant work.

Mr. Roy: You say part of this study is feasibility, do you, in this particular work, co-ordinate with the Trade and Commerce and Industry Departments at some time or other?

Dr. Harrison: We do not do the same kind of work that they do.

Mr. Roy: No, but both areas could affect the same problems, of course?

Dr. Harrison: Well, certainly the people who are conversant with any of these specialized problems, which include Industry and Trade and Commerce, would be aware of what is going on and have the opportunity to make whatever input they wished, either financial or mental.

The Chairman: Is that all, Mr. Roy?

Mr. Roy: Yes, thank you.

The Chairman: I still have Mr. Langlois and Mr. Harding on my list, and we have only about three minutes left.

At Tuesday morning's meeting I would like to see the Committee begin discussion on Vote 40. Mr. MacNeill is going to be able to be with us on Tuesday morning. Mr. Langlois have you one question or two questions?

Mr. Langlois: One minute or so.

The Chairman: Mr. Langlois is next on my list, so I will let him ask his question, and in all fairness to Mr. Harding, I think possibly Tuesday morning we could give you a little time. . .

Mr. Harding: I will not be here Tuesday morning, Mr. Chairman.

The Chairman: Well, would it be all right then if we leave your questions until we go back to Vote 1 when the Minister is here. . .

Mr. Harding: That is quite all right.

The Chairman: . . . and I will put you on the list at that time? Is that agreeable to you?

Harding: Yes, that is all right.

Mr. Langlois: Well, to save time I think you know my question, so I will let it go.

Mr. MacNeill: Your question was whether there were any discussions under way with the Province of Quebec on pilot studies, is that right?

Mr. Langlois: No, you gave me the answer to that when you were answering Mr. Deakon, but before that you were referring to studies under way in different basins in Canada. You mentioned all kinds of rivers but there were no names that I could recall being from Quebec, so I was wondering if there was a mix-up in names, or if Quebec was out of the picture, and if it was their fault or our fault?

Mr. MacNeill: Well, at the present time it is correct to say there are no studies under way between ourselves and the Province of Quebec on Quebec rivers.

It is also correct to say, and this may clarify a statement I made earlier, that although we have no studies under way with Quebec and no active discussions under way with Quebec, or active discussions under way with the Province of Ontario, the federal government last year made a firm offer to the Province of Ontario and to the Province of Quebec to pay the full cost of a pilot study of pollution abatement and other matters on the Ottawa River, leading to the preparation of a comprehensive framework plan for development and management. That offer, so far as we know, is still being considered by the Province of Quebec and the Province of Ontario. So there is an offer to undertake discussions leading, we would hope, to such an agreement and studies on the Ottawa. However, to repeat myself, there are no studies under way at the moment and no active discussions.

The Chairman: Thank you, Mr. MacNeill.

OFFICIAL REPORT OF MINUTES
OF
PROCEEDINGS AND EVIDENCE

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Translations under the direction of the Bureau for Translations, Secretary of State.

ALISTAIR FRASER,
The Clerk of the House.

HOUSE OF COMMONS
First Session—Twenty-eighth Parliament
1968

4
Government
Publications

STANDING COMMITTEE
ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE
No. 4

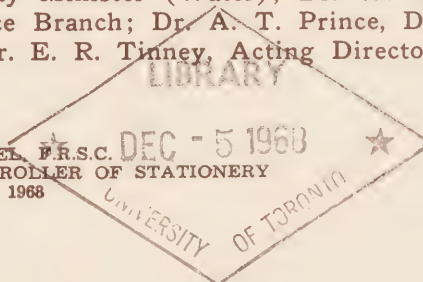
TUESDAY, NOVEMBER 5, 1968

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources

WITNESSES:

From the Department of Energy, Mines and Resources: Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J. W. MacNeill, Acting Assistant Deputy Minister (Water); Dr. W. M. Cameron, Director, Marine Science Branch; Dr. A. T. Prince, Director, Inland Waters Branch; Dr. E. R. Tinney, Acting Director, Policy and Planning Branch.

ROGER DUHAMEL, P.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968



STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

Aiken,
Beaudoin,
Comeau,
¹ Cullen,
Danson,
Deakon,

Gilbert,
Grills,
Harding,
Langlois,
² LeBlanc (*Rimouski*),
Marchand
(*Kamloops-Cariboo*),

Moores,
Ricard,
Ritchie,
Roy (*Timmins*),
Serré,
Sulatycky—(20).

(Quorum 11)

M. Slack,
Clerk of the Committee.

¹ Mr. Cullen replaced Mr. Orange on Monday, November 4.

² Mr. LeBlanc (*Rimouski*) replaced Mr. Chappell on Monday, November 4.

ORDER OF REFERENCE

Monday, November 4, 1968.

Ordered,—That the names of Messrs. Cullen and LeBlanc (*Rimouski*) be substituted for those of Messrs. Orange and Chappell on the Standing Committee on National Resources and Public Works.

ATTEST.

ALISTAIR FRASER,
The Clerk of the House of Commons.

REPORT TO THE HOUSE

Tuesday, November 5, 1968.

The Standing Committee on National Resources and Public Works has the honour to present its

FIRST REPORT

Your Committee recommends that it be authorized to sit while the House is sitting.

Respectfully submitted,

LEONARD HOPKINS,
Chairman.

(Concurred in—November 7, 1968)

MINUTES OF PROCEEDINGS

Tuesday, November 5, 1968.

(4)

[Text]

The Standing Committee on National Resources and Public Works met this day at 9:50 a.m. The Chairman, Mr. Leonard Hopkins, presided.

Members present: Messrs. Beaudoin, Comeau, Cullen, Danson, Gilbert, Hopkins, Langlois, LeBlanc (*Rimouski*), Marchand (*Kamloops-Cariboo*), Moores (*Bonavista-Trinity-Conception*), Ritchie, Roy (*Timmins*)—(12).

In attendance: From the Department of Energy, Mines and Resources: Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J. W. MacNeill, Acting Assistant Deputy Minister (Water); Dr. A. T. Prince, Director, Inland Waters; Dr. E. R. Tinney, Acting Director, Policy and Planning; Dr. W. M. Cameron, Director, Marine Science; Mr. R. B. Code, Personnel Adviser; Mr. J. C. Allen, Senior Financial Adviser.

The Chairman reported on the recommendations of the Subcommittee on Agenda and Procedure that the proposed trip to Burlington, Ontario be postponed until next spring and that the trip to the Fuels Research Building on Corkstown Road be delayed until late fall or winter. The Committee agreed with these recommendations.

Dr. Harrison suggested that the Committee visit the Booth Street buildings of his Department and the Chairman advised that the "Steering" Subcommittee would consider this proposal.

Dr. Harrison tabled a document in response to a request by Mr. Roy, entitled "Provision for Professional and Special Services", copies of which were distributed to each member. This document was ordered printed as an Appendix to the proceedings of this day. (*See Appendix B*).

Mr. MacNeill tabled two publications entitled "The Administration of Water Resources in Canada" and "Water Pollution Control—A Digest of Legislation and Regulations in Force in Canada", copies of which were distributed to each member.

The Committee resumed consideration of the Revised Estimates (1968-69) of the Department of Energy, Mines and Resources.

The Chairman called Item 40, under the heading "Water and Coordination of Renewable Resources Programs".

Mr. MacNeill, after introducing Doctors Cameron, Prince and Tinney, made a statement summarizing the major functions and responsibilities of the water section.

Mr. MacNeill, was examined, assisted by Dr. Tinney, Dr. Harrison, Dr. Cameron and Dr. Prince.

And the examination of the witnesses continuing, the Committee adjourned at 11:40 a.m. to the call of the Chair.

M. Slack,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, November 5, 1968.

● 0951

The Chairman: I see a quorum, gentlemen, so we will get started.

Your Steering Committee met just prior to this meeting and recommends to the Committee that the trip to Burlington which we discussed should be postponed until spring and that we make the trip out to the Fuels Research Centre on the Corkstown Road at any time during the late fall or winter. Is this acceptable to the Committee? Any comments? All in favour?

Dr. J. H. Harrison (Assistant Deputy Minister, Mines and Geosciences): With respect, sir, I suggest that the real interest of this Committee would be not so much in the Corkstown Road Centre, which is a very fine new establishment, but which is not yet occupied. The first building is in the process of being occupied now. I would suggest that you might prefer to visit our establishment on Booth Street to see some of the activities going on there, which will be transferred, in part at least, out to the Corkstown Road. We have many people working there, under somewhat primitive conditions I will admit, but it might be interesting for you to see how we are working now. We can give you a much better appreciation of what we are doing in the Mines Branch of our department and in the Fuels Research section of it, if you come to Booth Street. If you will just give us an idea of when you might like to come, we can arrange, I am sure, a first-class two hours, three hours, or whatever you care to spend there, of interesting technological activities.

The Chairman: Thank you, Dr. Harrison. The Steering Committee will take up this suggestion and bring a report back to the meeting for your acceptance or rejection.

First of all this morning I am going to call upon Dr. Harrison, who has a paper relating to the information

which was asked for the last day by Mr. Roy, and I understand that again this paper is not in French this morning. I believe we could have it by Thursday morning.

Dr. Harrison: You could have it by Thursday morning, Mr. Chairman. You will recall that Mr. Roy requested that this breakdown be given in the total of our provision for professional and special services in the departmental estimates. We have this paper now, which we got together late yesterday. Therefore we had no opportunity to have it translated. We can pass this out to you in its present form, if you wish, Mr. Chairman. We could have it prepared in French for you by Thursday, or you might also wish to consider the possibility of tabling the document for the Minutes of Proceedings and Evidence, in which case it would appear in both languages.

● 0955

The Chairman: Does anyone have any objections to tabling this and having it printed in the Minutes in French, rather than having it handed out again on Thursday morning in French? Is this satisfactory?

Agreed.

Mr. Langlois: Mr. Chairman, while we are on this subject of printing the reports, what decision did we arrive at? Are we going to bilingual reports, or are they going to be separate, so many English and so many French versions?

The Chairman: During our first meeting we decided, with the agreement of the Committee, to print 250 copies in French and 750 copies in English, and I understand that the Broadcasting Committee is using a different method. They are using one-half page in French and one-half page in English as an experiment. If it proves satisfactory, we may well consider adopting it in other committees. The officials of the House are looking into that now.

Mr. Langlois: We could not decide to have this right now. Is that right?

The Chairman: I understand the officials of the House are looking into this right now for all committees, so I think we could lay it over until a further report, if it is agreeable.

Mr. Langlois: Then, Mr. Chairman, I do not think we should agree to the proposition that we have the recording department take care of the translation, because the French copy is going to land here in about a month's time. So either we get two languages in the same copy, which is all right, or we will have the Department make up a French version.

The Chairman: Perhaps in view of that we should ask the Department to have these ready for us on Thursday morning.

Mr. Langlois: You know how long it takes to have the translation on these committees; it takes three weeks to a month, sometimes longer.

The Chairman: Thank you, Mr. Langlois.

We have Dr. Harrison this morning sitting in for the Deputy Minister, and I believe at this time Mr. MacNeill has some publications he wishes to discuss with you. We will have a report from him on the responsibilities and functions of the water sector, and then I will proceed to call Vote 40.

Mr. J. W. MacNeill (Acting Assistant Deputy Minister (Water) Department of Energy, Mines and Resources): Mr. Chairman, in answer to a question from Mr. Hymmen on Thursday last, I agreed to arrange to have tabled this morning two documents: one entitled "The Administration of Water Resources in Canada" which was prepared by the Canadian Council of Resource Ministers in co-operation with the federal and all the provincial governments. This document sets out in summary form the administrative framework for water management in Canada in the federal government and in each of the provinces and it also deals with federal-provincial institutions and international institutions. I may say, Mr. Chairman, that this document is available in both French and English and you can advise the person who will distribute it which language you would like to have it in.

• 1000

The second document is a digest of water pollution control laws and regulations in Canada. This document was prepared by the CIL as a public service and it has been printed by the Canadian Council of Resource Ministers. Unfortunately, Mr. Chairman, as this docu-

ment originated in the private sector it is not available in both languages. It is only available in English and we will distribute the English copies this morning.

The Chairman: I wonder if we could have a copy of those for Mr. Slack so that he can copy the actual titles of them in the minutes, please.

Mr. MacNeill: Yes. Could you arrange to distribute them right now?

The Chairman: While they are being distributed I will ask Mr. MacNeill to introduce the officials he has with him this morning.

Mr. MacNeill: I would like to introduce the directors and acting directors of the water sector. First of all I will introduce Dr. W. M. Cameron, who is the Director of the Marine Sciences Branch. Dr. Cameron has been the Director of that branch since 1962. He is a son of the Prairies and, like so many other sons of the Prairies, he decided to go to sea and he did this in a very special way. He has his Masters in zoology from the University of British Columbia and his Ph.D. in oceanography from the Scripps Institute in California. Dr. Cameron has had and is having a very outstanding career both in government and university. He has held a series of important posts—the Fisheries Research Board, the Navy and the Defence Research Board—before coming to the Department of Mines and Technical Surveys, and now to our Department.

I would also like to introduce Dr. Prince on my right. Dr. Prince is the Director of the Inland Waters Branch. I believe you met him last Tuesday. The Deputy introduced him to you when he was pinch-hitting for me.

Finally I would like to introduce Dr. Kinney, who is seated beside Dr. Prince. Dr. Kinney is the Acting Director of the Policy and Planning Branch. This is the newest of the three branches and Dr. Kinney is the newest member of our group. He has a degree in civil engineering from British Columbia as well and he has a Ph.D. from the University of Minnesota. Dr. Kinney spent ten years as a professor of water resources and has spent the last five years as the Director of Water Resources Research and Planning. I may say that we are very pleased to have attracted Dr. Kinney to the water sector.

The four of us—myself and the three directors—will endeavour to answer your questions concerning the water sector program over the next few meetings of the Committee.

The Chairman: Thank you, Mr. MacNeill. Would you now like to go ahead and outline briefly the responsibilities and functions of the water sector?

Mr. MacNeill: Yes, Mr. Chairman.

The Chairman: Possibly before you do that I will call Item 40:

Water and Coordination of Renewable Resources Programs.

40 Administration, Operation and Maintenance including the expenses of the Saskatchewan-Nelson Basin Board and the Atlantic Tidal Power Programming Board including the recoverable expenditures relating thereto, recoverable expenditures incurred in respect of Regional Water Resources Planning Investigations and Water Resources Inventories and authority to make recoverable advances in amounts not exceeding in the aggregate the amount of the shares of the Province of Manitoba and of the Province of Ontario of the cost of regulating the levels of Lake of the Woods and Lac Seul and the amount of the share of provincial and outside agencies of the cost of hydrometric surveys, and the expenses of the National Advisory Committee on Geographical Research and the National Committee for Canada of the International Geographical Union—30,457,400.

• 1005

The Chairman: I will now ask you to give a brief resume.

Mr. MacNeill: Mr. Chairman, in dealing with our estimates I thought it might be helpful to the Committee—as our estimates and the document that you have are not on a program basis—if I were to briefly summarize the major functions and responsibilities of the water sector, try to relate them to the three branches and also try to relate them to the vote structure which you have in front of you. I will run through them very briefly and you may want to pursue any one of them later in questions.

The first responsibility of the water sector, I would say, and its newest, is to advise on water policies and programs, to formulate and evaluate water policies, programs and options therefor and to advise the Minister. This responsibility covers both inland and marine waters. It is centred in the Policy and Planning Branch

but, of course, the Inland Waters Branch and the Marine Sciences Branch are both actively involved in this.

Second, the sector develops and administers a number of data collection programs. This is an essential foundation for our policy work; it is also essential for planning, development and management. These data are used throughout Canada by governments and by the private sector. I might mention three areas. There is the hydrometric survey, which is the program responsible for measuring the flow of our waters in our rivers—the supply of our water, you might say—and the Canada hydrometric survey is centred in the Inland Waters Branch. On the other side we have the hydrographic survey. Its responsibility is to measure and map the depths of our waters. The hydrometric survey measures the flow and the supply and the hydrographic survey measures the depths of our waters—navigable waters, harbours, and so on—and this important responsibility is centred in the Marine Sciences Branch.

I mentioned last Thursday that data on the socioeconomic aspects, on the demand side of the water equation, were badly needed. The design and development of new programs to collect and compile socioeconomic data is the responsibility of the Policy and Planning Branch.

• 1010

Third, there is research. This is a major activity of the water sector and not only in-house research, Mr. Chairman, but also the encouragement, sponsorship and the co-ordination of research and associated training in the university community and to an increasing extent in the private sector. I might mention three or four broad areas here. First of all, the very large program of research and exploration of Canada's tremendous oceanographic resources and the resources of the sea bed is centred in the Marine Sciences Branch. Research on the physical aspects of inland water resources, including major water pollution problems such as the Great Lakes, is centred in the Inland Waters Branch. Again, research and studies on the socioeconomic aspects of our water resources is now getting underway in the Policy and Planning Branch. I might mention in addition, Mr. Chairman, that last year we initiated a new program of grants in aid of university-sponsored research which is being administered both through the Policy and Planning and the Inland Waters Branch with the assistance of a national advisory committee.

Fourth, co-ordination in the water field. Co-ordination is extremely important because of the divided jurisdiction within both the federal and provincial governments. If you study the document that was handed out this morning you will appreciate the very large number of governmental agencies that are involved in the water game.

The Policy and Planning Branch carries the major responsibility for interdepartmental, federal-provincial and, through proper channels, international co-ordination but all branches, of course, are expected to secure the effective co-ordination of their own programs. In the Inland Waters Branch but especially, I think, in the Marine Sciences Branch the co-ordination function has an international dimension.

Fifth, I might mention planning. I am thinking here of basin and regional planning. This is undertaken both directly and in co-operation with other agencies, and especially in co-operation with the provinces.

The responsibility for the planning function has been formally centered in the Policy and Planning Branch, but again the work occupies both the policy and planning and the Inland Waters Branch. The Planning Division of the Policy and Planning Branch is primarily concerned with the Engineering Division of the Inland Waters Branch and the Water Quality Division of the Inland Waters Branch.

The sixth, and last, broad area that I will mention is the administration of acts and regulations and agreements. This is continuing and an important responsibility of the water sector. For example, it includes the Canada Water Conservation Assistance Act, which is a vehicle for federal-provincial programs. It includes a large number of federal-provincial agreements for planning, conservation and development. It also includes a large number of IJC boards and regulations governing the operation of our international water bodies.

With regard to the vote structure, Mr. Chairman, the funds for each of these programs and for each of the branches are found in Votes 40, 45 and 50. If you turn to page 10 you will find that the vote structure provides a breakdown in terms of operation, capital and grants. The operation or administration funds for each of the branches are found in Vote 40. The capital funds, construction and acquisition are found in Vote 45. The grants, contributions and subsidies are found in Vote 50. So, in order to get a picture of the total funding for each branch you have to add up these three figures from Votes 40, 45 and 50.

I think that is all I have to say in introduction, Mr. Chairman.

• 1015

The Chairman: Thank you, Mr. MacNeill. Shall Item 40 carry? Mr. Langlois?

[*Interpretation*]

Mr. Langlois: Mr. Chairman, first of all I would like to draw your attention and that of the members to the fact that our colleague Mr. Gordon Aiken was sent to hospital last Saturday. And I would like, on my own behalf and on behalf of the members of Committee to wish him a prompt recovery, we hope we will soon have him at this table again.

When Mr. Aiken gave his answer to the parliamentary secretary of the Minister, he first of all congratulated Mr. Greene very warmly for the fine work that he was doing and then, as all good opposition members do, he switched into a different key and started hammering away at the minister.

I was quite surprised when he mentioned towards the end of his statement that the Department, to Mr. Aiken's great surprise, had reduced the amounts of moneys allotted for the control of pollution. I did not have the figures at the time. I had not checked the Blue Paper on the budget estimates, and I was slightly dumbfounded by this statement.

Every one in Canada talks of pollution without really knowing too much about it. It is the smart thing to do, I found it surprising that the Department had reduced the funds allocated to this item. Meanwhile, I checked the Blue Paper. I am no expert in book-keeping, nor am I an accountant, but after a brief study, I found out that we have not reduced expenditures for pollution but that, on the contrary, they have been slightly increased. I would like to have Mr. MacNeill's comments in this respect. I want to know whether, yes or no, we have reduced the estimates under the item pollution.

[*English*]

The Chairman: Mr. MacNeill.

Mr. MacNeill: Mr. Chairman, in looking at the document that was presented to the Committee I think it is understandable that the impression was conveyed that there had been a reduction in the program of the water sector. The summary on page 1 of the document shows that the over-all budget for the water sector in 1967-1968 was \$51 million and in 1968-69 it was \$47.5 million, showing a decrease of \$3.4 million. However, there is an explanation for this which should

be given. The 1967-68 budget included a very substantial sum for two items and if you will turn to page 10 you will find under Marine Surveys and Research, Vote 45, a reduction from \$9.8 million to \$5.6 million. This is accounted for almost entirely by the completion of construction of three ships prior to the end of that fiscal year.

• 1020

If you go down the page to grants and contributions under Vote 50, Policy and Planning, you will see a reduction from \$10.2 million to \$5.6 million, an overall reduction of \$4.6 million. This is accounted for again almost entirely in one item, the completion of the construction of the Red River floodway. The 1967-68 budget contained a figure of \$6.7 million for the Red River floodway. The 1968-69 budget contained a figure of only \$375,000 for the Red River floodway, a reduction of \$6.4 million in that one program alone.

So to summarize, Mr. Chairman, these two programs together, the Red River floodway and ships, account for a reduction of over \$11 million. If you compare that with the over-all reduction in the sector of \$3.4 million you will appreciate that for other program objectives including pollution there has been an increase.

The Chairman: Thank you, Mr. MacNeill. Are there any other comments before I call Item 40?

Mr. Gilbert: Mr. Chairman, Mr. MacNeill said that the decrease is \$3.4 million. In this \$47 million, which is the amount for 1968-69, are there any major construction grants comparable to what you set forth concerning the 1967-68 estimates?

Mr. MacNeill: My general comment would be not of the same dimension, not of the same order as the \$6.7 million that was in the budget for the previous year for one program, the Red River program.

Capital funds are provided in the 1968-69 budget for a number of programs for federal-provincial agreements under the Canada Water Conservation Assistance Act, the Inland Waters Branch program and also for the Marine Surveys and Research program. If you would like some details on the figures in Vote 45 I would ask the three directors concerned to provide you with that information.

Mr. Gilbert: I think you said there was an \$11 million difference in the 1967-68 estimates. I am just

wondering what the total amount for capital grants for 1968-69 would be.

Mr. MacNeill: Do you have page 10 in front of you, sir? The figures are shown there and the total amount available for construction or acquisition in 1967-68 in all three branches is \$14.5 million and in 1968-69 it is \$11.2 million. If you look at the right-hand column you will see that the major reduction took place in the Marine Surveys and Research program. As I mentioned, that is almost entirely accounted for by the ships. Under grants, contributions and subsidies a reduction is shown between the two years from \$10.5 million to \$5.8 million. If you look again at the right-hand column you will see that that is entirely accounted for in one item, \$4.6 million, which in itself is less than the reduction in this one program, the Red River floodway program. I am not sure that I am answering your question, Mr. Gilbert, but I am trying to.

Mr. Gilbert: Where did you get those last figures on page 10?

• 1025

Mr. MacNeill: The third last line shows \$10.2 million in 1967-68, is that not right? The third last line of the second column also show \$5.6 million in 1968-69, a reduction shown in the right-hand column of \$4.6 million.

Mr. Gilbert: I see that.

The Chairman: Is that all, Mr. Gilbert?

Mr. Gilbert: If I may go back to your opening statement, Mr. MacNeill, you say with regard to policy and planning that the total amount is found by adding Items 40, 45 and 50. Is that right? Give me the total amount there. I have more figures here than . . .

Mr. MacNeill: You are referring to page 10 again?

Mr. Gilbert: Page 10.

Mr. MacNeill: If you take the third line under the first heading, research and investigations on water resources—policy and planning, you will see a figure there of approximately \$4 million. If you go down to the last line of Item 45, construction or acquisition—policy and planning, you will see a figure of \$3,000. You add that to the \$4 million. If you go down to the last line of Item 50, grants and contributions—policy and planning, you will see a figure of \$5.6 million. If

you add that to the previous two figures you get an over-all total of approximately \$9.6 million for the Policy and Planning Branch. You can go through the same exercise for each of the other two branches to get their over-all total.

Mr. Gilbert: Very well.

Mr. Ritchie: The Prairie farm rehabilitation people are involved in numerous water conservation programs and in my riding there is a dam on the Shellmouth costing approximately \$10 million. Is this in these estimates or is there a separate estimate for this?

Mr. MacNeill: It is the latter, sir. They have separate estimates and their estimates would now be shown in the budget of the Department of Regional Development. In previous years you would find their estimates in the budget of the Department of Agriculture.

Mr. Ritchie: Does their work or do their aims differ from yours? I presume there are consultations, but how might they differ from what you people do and they do?

Mr. MacNeill: I would say, sir, that the broad objectives of our two organizations are different but complementary. The water sector is responsible for the over-all co-ordination of federal water policies and programs. It is also responsible for the development of comprehensive basin and regional framework plans. This is a program that is just getting under way, although a number of studies are now under way.

In connection with the latter, we are working with and through a large number of federal agencies. The water sector provides the major input on the planning function and on the co-ordination with regard to the hydrographic, hydrological and socio-economic studies, but the Department of Regional Development, through PFRA, will and is being brought into these programs and studies on the agricultural aspects, the Department of Fisheries on the fisheries aspects and the Department of Transport will be brought in in cases where the navigational aspects are significant. However, since all of these uses of water in a given basin are interrelated they have to be co-ordinated within an over-all framework. The provision of that framework and that co-ordination and direction is the responsibility of the water sector of E.M.R.

Mr. Ritchie: It has been my experience in a small way that minor disasters have occurred to our wildlife and to our local lake fishing, and various other projects which I do not presume your Department was

involved in, but particularly in the matter of our wildlife I presume there is machinery set up to make sure these do not get involved or to safeguard our resources as best we can.

• 1030

Mr. MacNeill: I think it is fair to say, sir, that in the past—in fact, up until the last few years—the planning of water resource development in Canada has not been as comprehensive as it should have been. One of the major themes to come out of the Resources for Tomorrow Conference in Montreal in 1961 was the need for a more comprehensive approach in water resource planning. I think it is fair to say that recreation aspects, which are becoming increasingly important, and fish and wildlife aspects, which are also becoming important, have in the past been relatively neglected. We hope in the future, through the development of more adequate co-ordination machinery and the development of these comprehensive planning concepts, to more adequately recognize the uses of water, like recreation and fish and wildlife, and bring them into the planning process at an early stage. This will mean co-operation and co-ordination with the provinces and with a number of federal agencies and in the basins and regions in question we would hope with local interest groups, fish and wildlife leagues and other groups of that kind.

Mr. Gilbert: Mr. Chairman, Mr. MacNeill said that Dr. Tinney is responsible for policy and planning and he set forth that his second function was a data collection program, which I think would determine the supply and demand of the water available. I would like to hear Dr. Tinney or yourself set forth how you determine the supply of water. How do you break it down?

Mr. MacNeill: Mr. Gilbert, I will ask Dr. Tinney to answer your question. I would just like to point out that the two sides of this equation, supply and demand, are organized in two different branches in the sector. The Inland Waters Branch, through the hydrographic survey, and the engineering division are primarily concerned with the supply side. The Policy and Planning Branch is primarily concerned with new programs to enable us to develop forecasts of water use on the demand side. However, I am sure Dr. Tinney can bring the two together and I will ask him to answer your question.

Dr. E. R. Tinney (Acting Director of Policy and Planning, Department of Energy, Mines and Resources): What we mean by supply is a dual-sided

question. There is physical supply, in which one measures the quantities in the streams over a period of time and finds out the variability in the supply as related to the rainfall and the other climatic conditions. This is the engineering side of it.

• 1035

The economic side of supply relates to the possibility of putting any quantity of water desired at any point on the earth for a price. There is really no question of a limited supply anywhere on the earth. You can make a lake as large as you like so long as you are willing to pay for it. So that side of supply is very much an economic question; depending on how much you are willing to pay you can supply certain quantities of water at certain prices. When you get to the other side, what is the demand, you then have to ask what is demand in economic terms. What prices are you willing to pay for water to serve a particular use, whether it is agriculture, pollution abatement or a host of other things we might envisage. The question then is how does one relate this supply in economic terms to the demand in economic terms, and then look at the variety of uses and the damages that might occur from a particular program to fish and wildlife, to recreation and to a variety of things. So, it becomes a rather complex physical and economic exercise to get the question of supply, as it does with demand. I do not know whether that answers your question but I think it is in the direction that perhaps you were suggesting.

Mr. Gilbert: What guidelines would you use, Dr. Tinney, in determining this supply and demand? Would any priorities be set up in determining a program? It may be that there will be a big demand for recreational water or water for industrial purposes. Do you have any priorities? Just how do you handle that?

Mr. MacNeill: Mr. Chairman, I think this question goes to the heart of the comprehensive planning process. I think it is important to start from the assumption that water development is not an end in itself, it is a means to an end. Those ends may be socioeconomic goals in a region, they may be conservation goals, they may be aesthetic goals or they may be very simple goals to develop water for a specific use; a municipal water supply, an industrial water supply, a pond for duck breeding, or what have you.

In the comprehensive planning process you would hopefully start, as well as you can, with some idea of the goals in the area, the broad socioeconomic, conservation and aesthetic goals in the area. You would

endeavour to develop an inventory of existing water uses for all purposes. You would endeavour, through economic forecasting techniques, to develop forecasts of future water requirements for municipal, industrial, recreational, fish and wildlife, agricultural and all other purposes. In developing these forecasts one has to branch out into the various economic sectors, so one has to really have a picture of economic development and economic growth in the region and the pattern that this economic development is likely to take and one comes up with an indication of future water demands that are more or less "location specific" at different points in the river.

Then, simultaneously perhaps, one looks at the supply side of the equation and identifies alternate ways and means of meeting those demands. There are many alternatives; you can have dam construction—that is an obvious one—reservoir construction to improve storage, or perhaps improvement in land use practice in the headwaters of the basin might generate an increase in water supply. Or, if you are basically short of water in the basin at the price your demand studies indicate can be paid for water you might consider importing water from an adjacent basin at a price. There is a whole range of possibilities for augmenting water supply or meeting these demands—"location specific". You marry the two through a very, very complex systems approach, you evaluate the costs and benefits of each and you come up with a suggested scheme of development, or perhaps a suggested scheme of non-development. If your objectives in a basin are for reasons of aesthetics or conservation, perhaps the best thing to do is to leave things more or less as they are.

• 1040

Mr. Gilbert: On the basis of the information that you have at the moment—from your data collection and so forth—would it be fair to say that we have an oversupply of water in relation to demand?

Dr. Tinney: I do not think one can generalize a statement of that nature and say yes or no. It has to be a qualified answer. There are areas of great supply in Canada and there are areas of great shortage. This still comes back to my original observation that you can correct the distribution at some cost so there is no shortage of water in a physical sense and it can be transported and is movable, but whether or not the economics of a particular situation warrant the transfer of such water to increase a local deficiency is a much more complicated question. It is a question you get at, as Mr. MacNeill said, through comprehensive planning, and perhaps to be more specific

about your question of priorities, you get at it through interest-based planning, in which the planning recognizes all the interests of that group in the whole planning stage, from the very informal stage right through to the final development of the plan two or three years after you begin it. The way the priorities are put in is whether or not the areas they are talking about really want that kind of development. So, it is very much the comprehensive based planning, with an interest factor attached to it, that arrives at the priorities. Of course, the costs and benefits are always elucidated at every step.

Mr. Gilbert: Dr. Tinney, have we had any demands for export of water to our friends in the South?

Mr. MacNeill: Mr. Chairman, perhaps I could say a word or two about this. I think it is almost self-evident that there has been an upsurge of interest in the whole question of moving water from one part of the country to another, and from one part of the continent to another, in the last few years. I think this interest derives very largely from the publication of concepts—not plans but concepts—such as the NAWAPA concept, the Grand Canal concept and large number—and I use the term “large” advisedly—if other concepts.

I think it is important to note a number of things. One is that all of these concepts originated in the private sector. To my knowledge there has been no government either south of us or in Canada that has formally raised the question of continental diversions of water. Last year the Minister of the Department put this very succinctly and simply when he said, “You cannot sell water unless you have a buyer and you cannot buy water unless you have a seller”. At the moment there is no buyer and there is no seller.

• 1045

Most of these concepts originated in the private sector. Indeed, all of them originated in the private sector and to my knowledge none of them have considered the very important question that Dr. Tinney raised, the question of the economics of supply and demand. Is there really a market for this water at prices that are reasonable? Can one supply water at reasonable cost? Dr. Tinney, do you want to add anything to that?

Dr. Tinney: I think that is the complete statement of it. As Mr. MacNeill said, there are a number of purely speculatives and I know of no analysis on either side that really suggests yes, no or even maybe on the whole question.

Mr. Gilbert: Are you saying that the final decision with regard to the export of water falls within the Department of Energy, Mines and Resources? In other words, there could then be a private export of water?

Mr. MacNeill: The question of export of water, like practically every other major policy question in the water field, is of interest to a large number of governments, a large number of agencies and a large number of interest groups. In the case of water in Canada, jurisdiction is shared between the federal and the provincial governments and so I submit that a policy on this matter would have to be mutually acceptable to both the federal and the provincial governments acting, I presume, on the advice of a number of agencies in each level of government as well as acting on the advice of the private sector.

The Chairman: Before we go any further I might say that before taking a formal vote I have Mr. Danson, Mr. Ritchie and Mr. Marchand on my list. Mr. Danson?

Mr. Danson: I think possibly I got an answer from the answer to Mr. Gilbert's question. If I may digress for a minute, I think there is just a little confusion here—and I do not mean to be facetious about this—but my question was what was the socioeconomic data in this context. There is some terminology that sometimes escapes me and then in answer to it we use terms like “interspace” and “location specific”. We are having trouble communicating. We often speak of the advantages of bilingualism, but we have a trilingualism developing here and there are terms used that are sometimes difficult. I know last night at the Finance, Trade and Economic Affairs Committee meeting reference was made to the Tribunal and they said they were there on good behaviour and someone wanted a definition of “good behaviour” and they said it was a pleasure. I did not think that good behaviour and pleasure went together very much, and then they threw in energy to boot.

As I say, I do not mean to be facetious but sometimes it helps immeasurably if we could use layman's terminology. The words themselves sometimes mean something but in their context they do not always do so when we are endeavouring to communicate. However I did get something out of it. Without speaking for Mr. Gilbert, what I would really like to know is what are we talking about in terms of policy, priorities and objectives, or do we have as yet the accumulation of this socioeconomic data that is going to develop out

policies and our priorities and our social and economic objectives? I do not wish you to repeat the whole thing again.

Mr. MacNeill: Mr. Chairman, I think it is understandable that we may not be communicating too well. It is true that certain jargon grows up in an area and water resources is no different from any other field. Jargon has grown up and sometimes we forget that we are using jargon when in fact we are using it.

Socioeconomic data covers a whole range of things, or it can. For example, we have very little information in Canada on water prices; how much is being paid for water at the present time for various uses. As has been mentioned, we have very little information on water costs. We have relatively little information on water demands in our various basins, let alone our various regions. In order to develop demand forecasts you need a whole substructure of socioeconomic data, population and so on. A lot of this is available but a lot of it is not.

With regard to the term "interest-based", what we mean when we use this term is that people who are concerned with the use of water in a given river basin or in a given region should be brought into the planning process, should be involved in the planning. Who are these people? Obviously they are federal and provincial agencies and municipal governments. They are also the industrial sector. They are very much concerned about pollution and securing water of various qualities for their processing requirements. Fish and wildlife leagues are concerned about the use of water in the basin. Recreation groups of one kind or another and chambers of commerce might, if their region is based on tourism, be very concerned about the way in which a water body is used. When we say interest base planning, this is jargon for saying that through some structure we have to involve all of these various interests in the planning.

• 1050

To come to your question, I guess we are saying, too, that at the local level—at the level of the river basin or the region—specific goals, objectives and priorities will be formulated in this planning process. We can set broad national objectives and broad national priorities, deciding to tackle this area before we tackle that area, but in terms of water resource development and water use, our detailed goals, our objectives and priorities, we are saying, will be set within the process or through the process of this comprehensive interest base planning. Is that any clearer now?

Mr. Danson: I was looking for an over-all type of policy of priorities and objectives which you are trying to achieve, but perhaps that would be an oversimplification of a pretty complex thing except that it is a matter which I think we, as politicians, and the people we represent are concerned about because we do hear these questions about what is our net supply of water and where it is going. Perhaps this could be better handled at a time other than this specifically, but I think it is a matter that concerns everyone and we would like to be informed, or I would.

My other question was on your university grant program which I think is particularly interesting. Has that been under way long enough to make any estimates of its ultimate value? I like the idea as it is non-bureaucratic. You are developing, I assume, trained personnel for your own Department in other interested areas. There should be some good economics involved.

Are there any specific schools that you are working with? Are you trying to develop let us say a centre in one school which is, perhaps, pre-eminent in its field—perhaps a graduate school—for this, or is it being spread around in the various departments of various universities?

Mr. MacNeill: I think, Mr. Danson, that it is really too early to make any judgments about the program. We think it is going very well, but it has only been under way for a year and I think we are going to have to wait for a few more years before we make any assessments as to its successes or its failures.

What we have done first of all is to establish a national advisory committee made up of experts drawn from the federal sector, provincial government agencies, the university community and the private sector. This national advisory committee has been given three duties. One is to advise the Minister on needs and priorities for research in the water field; the second is to effect some co-ordination of water resources research between the federal, provincial and university sectors in Canada; and the third is to advise the Minister on applications for grants in support of university-sponsored research.

I may say that our general objectives in establishing this program and establishing this committee were those you suggested, to undertake some much needed research on some of the major emerging problems and issues in this field and, secondly, to increase the pool of talent available to do this research and to work in government policy and planning areas, and in the private sector in the consulting field. There is a real

dearth of qualified people in the water resources field in Canada. So these were our two broad objectives.

• 1055

We set up the committee, we gave it these functions and it started to develop its program. The program approved so far by the committee consists of two types of grants. One is what we call individual research grants and these are made to the applicants through the university. Any qualified man in Canada working in any university is eligible to apply for a research grant. The grants are awarded by the committee after they have applied a number of tests such as relevancy, mission orientation and the merit of the proposal itself. We have had only one series so far. The second type of grant that the committee is considering is what we call a development grant, and the thought here is that a development grant will take the form of a block grant which will be given to selected universities—three, six, selected universities, we do not know how many—in the hope that at these universities we will develop centres of expertise in the water resources field, interdisciplinary programs covering engineering aspects, socio-economic aspects, all of the aspects involving various departments at the university.

There are a number of universities that have indicated their interest in this—far more than we will have funds to support—and the committee is now engaged upon an assessment of these universities from this point of view. I think it will be some months before the committee will be in a position to recommend the issuance of any development grants.

Mr. Danson: Thank you very much. That is very interesting.

The Chairman: Dr. Harrison would like to say a word on that item as well.

Dr. Harrison: Mr. Chairman, thank you. The Science Council of Canada recently published studies, one by the Science Secretariat, which is a detailed study of water resources research in Canada under the direction of a committee of the Science Council of Canada. The man in charge of the Secretariat study, Mr. J. P. Bruce, is now in charge of our Canada Centre for Inland Waters that is being developed at Burlington, Ontario, and subsequent to the collection of the data that is included in his report, a committee of the Science Council of Canada which monitored it then put up some proposals to the Science Council of Canada and these two were published simultaneously about three or four weeks ago.

The Science Council of Canada generally endorsed heartily the concept of the National Advisory Committee on Water Resources Research and what it is doing, and recommended greatly increased sums of money to be available for grants in aid of the nature described by Mr. MacNeill.

If the Committee would like, I could arrange to have copies of those reports made available to each member here next Thursday—the Secretariat report which is a detailed one, and the Science Council report, which is a summary of recommendations of the Science Council itself.

Mr. Danson: Do you mind, Mr. Chairman, if I just pursue this one point further? Would it seem logical, since we have this great research centre at Burlington, perhaps to have grants in this field of pollution concentrated at McMaster University, for instance, which is physically close by, so that you have your university research going on in the same general geographic area as you have your major facilities in this field. Then the school would really have something to work with and to get into.

• 1100

Mr. MacNeill: Mr. Chairman, the question of university participation in the program being developed at Burlington has been under active consideration for some time. We have been working with the AUCC, the Association of Universities and Colleges of Canada, in developing a very close university-Burlington co-operation. I think perhaps it would be of interest to the Committee if this were explained and Dr. Prince, the Director of the Inland Waters Branch, could perhaps indicate just what we are planning to do at Burlington in co-operation with the universities.

Dr. A. T. Prince (Director, Inland Waters Branch, Department of Energy, Mines and Resources): Mr. Chairman, I might say in this connection that the location of the site at Burlington was in part selected because of its proximity to a substantial number of universities. McMaster, of course, is the closest one to it but there are something like nine universities located within a radius of 50 miles of that site. As Mr. MacNeill mentioned, we have from the start of the planning of the site worked with the AUCC. They have had a committee and a representative of that committee has been working with us throughout the whole planning phase. We are in fact building accommodation, both offices and laboratories, as planned in the structure to accommodate some 65 or 70 university personnel right on the site. The actual construction of the permanent quarters has not yet started—it is

still in the planning stage—so we have adopted the policy of making facilities available rather than favouring any one university regardless of its local nature. We do however have quite close communication and participation with people from McMaster University already in the program on the site.

The Chairman: Mr. Danson you have had your allotted time. I could put you on the second round, if you wish.

Mr. Ritchie is next.

Mr. Ritchie: Just as a matter of information, are you involved in the assessment of the damage caused by the widespread use of herbicides, insecticides and so on, and, if so, do you believe it is a serious problem and will it become a more serious one in the future?

Dr. Prince: The question of the insecticide-herbicide problem is a very difficult one from the technical point of view. This matter is being looked at in general by the government through the Federal Interdepartmental Committee on Pesticides. Quite recently, our Department has had representation on that committee. In connection with our water quality studies we are developing a capability for assessment of the quantities and nature of these compounds. Specifically, the question as to whether it is a serious matter is a very involved one and it all depends on who you talk to, whether you happen to be an agriculturist who is interested in insect control or whether you are a wild life expert who is interested in the concentration of these things in natural biota. The subject is receiving very serious study in many quarters, including our own department, Mr. Chairman.

• 1105

Mr. Marchand (Kamloops-Cariboo): Mr. Chairman, I have another Committee meeting. Did you plan to go on for a few minutes?

The Chairman: I do not believe that we will be going past 11.30.

Mr. Marchand (Kamloops-Cariboo): My question is of a local nature but it does involve money and it does involve very serious policy implications or at least it fits into the water policy that was previously announced by the Minister.

I read in the local Okanagan newspapers, Mr. MacNeill, that Mr. Williston, the Minister in charge of Lands, Forests and Water Resources in the Province of British Columbia and Mr. Greene have agreed to start a

comprehensive water study in the Okanagan basin. Now you were quite familiar with the particular problem that aroused a lot of attention in the Okanagan—the proposed diversion of water from the Shuswap system into the Okanagan system. Is it true that agreement has been reached between the two ministers?

Mr. MacNeill: Mr. Marchand, I do not think I can add a great deal to what was said by the Minister in answer to a question in the House about two weeks ago. At that time the Minister indicated that he was very pleased that discussions had started between ourselves and the Province of British Columbia respecting a comprehensive framework study of the Okanagan and the associated problem of the Shuswap. He indicated that he and Mr. Williston had agreed to pursue these discussions as rapidly as possible and he expressed the hope that these discussions would indeed lead to a federal-provincial agreement for a comprehensive study on the Okanagan-Shuswap. That is the status of the understanding with the Province of British Columbia, so far as I know. We are and we intend to continue to actively pursue—and I know this is the intention of the B.C. officials—our discussions in the hope of arriving at a good agreement for a comprehensive study as soon as possible.

Mr. Marchand (Kamloops-Cariboo): Do you think “as soon as possible” might mean before Christmas? The statement that I read was by the Chairman of the Okanagan Water Basin Committee and it was dated October 29.

Mr. MacNeill: Mr. Chairman, I do not know when “as soon as possible” will be. I would observe though that when one embarks on what we have described as a comprehensive interest-based planning process one accepts the necessity of bringing along a large number of people and a large number of agencies. The more comprehensive you make it the more people you have to bring into the process, and the more people you bring into the process the more communication is necessary, with or without the jargon, and all of this takes more time. We would hope to involve as many interest groups as possible in a study of the Okanagan-Shuswap.

Mr. Marchand (Kamloops-Cariboo): Mr. Chairman, without taking too much time I would like to comment on Mr. Danson's remarks. I think perhaps if you were in my area this summer you would have found out what social-economic aspects of water really means. The community was very, very disturbed and upset about the proposal to manipulate some of the water from one area into another. It is a very serious

problem. I might say that I was very impressed with the way the public got out and took an interest in this particular project. Mr. MacNeill spoke about development or non-development and we were more concerned perhaps about non-development or development on a sound basis.

Mr. Danson: Well, Kalamalka Lake, Okanagan Lake and Lake Shuswap are beautiful lakes.

[English]

The Chairman: Mr. Danson, would you like to ask a supplementary?

• 1110

Mr. Langlois: Mr. Chairman, I have a short question to put before Mr. Danson proceeds.

On the question of university grants, McMaster University and its proximity to the Burlington centre, and the 50 mile radius that was mentioned, I am very interested in all that but I would like to remind the officials that Canada has a much greater radius than 50 miles and if you concentrate too much on this you might end up pretty soon with a Canada of 50 mile radius. I think everybody in this Department as well as other departments should keep in mind that Canada is a very widespread country and that the lollipops should be distributed evenly.

Mr. Danson: Well that brings me to what I wanted to say, which will not be in the form of question.

It is important for us all to keep in mind the whole policy, not only the policy of this department but all departments, on the specific relationship of government and government research to universities. We have the problem of the high cost of education and the jurisdictional problem of the federal government's role in education. We have the further problem of forcing our students to go abroad for post-graduate work. It is quite possible that we could concentrate and develop schools of excellence in various disciplines across the country—and I certainly do not mean in a 50 mile radius; I only used that in the context I did because of the Burlington facility. We have to balance the fragmentation of such efforts as applied to various universities with the advantages of cross-pollination and the particular regional interest. I hope this is something that we all keep in mind because government can play a very important role in the development of personnel. I think there should be some good economics involved too. We should be training people in

these various fields as we are doing our research. We should be developing teaching staff. We might develop a great school in international law at Laval University or a top rate school in heart surgery in Montreal.

Mr. Langlois: Laval is already a big school.

Mr. Danson: This was really an area of interest that I wanted to get off my chest but I will be pursuing this subject at future meetings.

Dr. Harrison: I would like to make a general response to the implications of both Mr. Langlois and Mr. Danson remarks. This is part of a problem which affects the whole Department, indeed the whole government, not simply the water Sector. In the case of the Inland Waters Branch the question of extreme urgency is the Great Lakes. This is something that affects a great number of the population of Canada. It was decided that we could not ignore this problem any longer and the federal responsibility in it. The question then became where in the Great Lakes should we set up an institute to carry out research on the Great Lakes. While several sites were examined the site chosen at Burlington was chosen in part because it was centrally located to a great number of academic institutions which could have input into this. Now we recognize of course the fact that there are implications of Great Lakes water flowing down the St. Lawrence River as well but, to begin with, we have to get somewhere nearer the start.

In this connection also—that is, general regionalization—we could refer of course to the Bedford Institute of Oceanography which is at Dartmouth just across the harbour from Halifax. We have another research centre in Calgary on the dry side of the Department, the Institute of Sedimentary and Petroleum Geology. We had plans for a major centre of astronomical research on the West Coast. Things of this nature are being considered by the Department at all times and the idea of regionalization was to get the work of the federal government in areas of concern both to the federal government and the provincial and municipal governments as well.

• 1115

Mr. Danson: Certainly after 25 years of Conservative government in Ontario I cannot think of a better place to start on pollution.

The Chairman: Gentlemen, I still have Mr. Roy on my list. I have allowed considerable leeway in ques-

ioning this morning because Items 40, 45 and 50 are such that you cannot really put each in a straitjacket.

I wonder if the Committee would be agreeable to my calling a vote on Item 40 at this time following which I will ask Mr. Roy to put his question. Then I believe we will have to adjourn for the day. Would the Committee be agreeable to that?

Mr. Gilbert: Mr. Chairman, we have not had any discussion on the work of Dr. Cameron, Director of the Marine Sciences Branch. There are estimates here pertaining to his branch and I do not want to be deprived of the privilege of putting questions to him.

The Chairman: Mr. Gilbert, I take it then that you want to ask questions following Mr. Roy. I will ask Mr. Roy to put his question at this time and, following that, Mr. Gilbert can question, and then we will adjourn until Thursday evening.

Mr. Roy (Timmins): Mr. Chairman, I understand that our water policy and planning is divided into basins throughout the country. How many regions of basins do we have and how many of these are under active concentrated study now?

Mr. MacNeill: Mr. Chairman, I believe that if one looks at the primary river basins of Canada—that is, those that empty directly into the sea—we have approximately 40–45 major primary river basins. If one considers both primary and secondary, and in this context the Ottawa River for example would be viewed as a secondary basin, we have a much larger number of river basins. I do not have the figure in my mind offhand but I can get it for you. Not all of these river basins of course, indeed relatively few of them, are important today from the point of view of economic activity, water uses, development, even as potential sources of supply to augment water in areas that are or may become short of water. I mentioned on Thursday that we had in the Water Sector undertaken a preliminary identification and evaluation of the major water problems and issues and a preliminary identification of those basins and regions that were of major significance today from the national point of view. This is not going to be an inclusive list—I am sure I will miss a few—but going right across the country, we have, first, the Fraser River in British Columbia. We now have an agreement on the Fraser River signed last year which provides (a) for a diking program in the lower Fraser Valley and (b) for the start of a comprehensive study in year 2. The Okanagan was mentioned earlier as an area that we are discussing with British Columbia. The Columbia River is under active

development. The Yukon River is becoming more and more interesting both to us, to the Territories and to the United States. In the Prairie region the Saskatchewan-Nelson is the major system. The Saskatchewan-Nelson is under an agreement for a major water supply study, again signed a year ago, between the federal government and the three provinces. That study is now under way and funds for it are provided in the estimates. It is a four year, \$5 million study. We have discussions under way with the Prairie Provinces on other secondary basins. In the Ontario region the Great Lakes has been mentioned as an area of primary interest for the government and the Department. A lot of our resources are being focused on the Great Lakes. On Thursday I also mentioned a comprehensive framework study on the Ottawa and the St. Lawrence. In Ontario, too, I could mention the Northern Ontario water studies that have been under way for some two years. These studies are being undertaken in co-operation with the Government of Ontario. They cover five major river basins emptying into James Bay and Hudson Bay; they are concerned with potential for development within those basins and also potential for diversion out of those basins into southern Ontario. And in the Maritimes we are engaged now in the first stage of a comprehensive regional water resources study that covers both the Maritime region and the Newfoundland-Labrador region. We hope the first stage will be completed by June 1969.

• 1120

The Chairman: Thank you.

Mr. Gilbert: Mr. Chairman, I wonder if Dr. Cameron would direct his attention to page 10 of the estimates. You will notice, Dr. Cameron, that there are three divisions—administration, operation and maintenance, then construction or acquisition, and grants.

Dealing with the first, administration, operation and maintenance, I notice the estimate set forth the sum of \$15,109,800 which indicates an increase of \$1,491,000 over the 1967-68 estimates. I would like to know in general terms, to begin with, what your department does, and why the increase in the spending.

Dr. W. M. Cameron (Director, Marine Sciences Branch, Department of Energy, Mines and Resources): As Mr. MacNeill pointed out, this branch is responsible for two main areas of activity. The first and the one which has been established by far the longest is its basic responsibility for all nautical charting—that is the charting of Canadian navigable waters—for marine

transportation. The Canadian Hydrographic Service has carried this for many years and continues to have that very heavy responsibility.

I think, I should make a short comment on the fact that Canada has by far the longest coastline in the world and indeed if we were to measure the actual coastline rather than the distance between headlands it would be almost astronomical in its extent. We compare its extent with that of the United States and that of the U.S.S.R., and when you think of the small population of Canada and the very heavy dependence Canada has on marine transportation and its growing importance of course in the movement of goods, you can recognize that a large part of our responsibility is not only to develop new charts of newly expanding waterways or waterways which are shortly going to be required for northern development, as an example, but to maintain these charts because they rapidly become out of date as not only man but nature changes the character of the bottom and they have to be resurveyed. A substantial part of the increase is to compensate for the increased cost of operation, which is a continuing phenomenon that impinges on any operation, the increased cost of supplies and the increased complexity of equipment that is now required. In this latter regard of course we see that the development and the use of more sophisticated equipment, electronically primarily, is leading, and is bound to lead further, to a much more effective and more economic use, shall we say, of our very expensive tools, our ships. It is an unfortunate but realistic situation that water with all its interest is most unco-operative in our ability to peer through it. My colleague in the surveys and mapping branch, Mr. Gamble, has a great advantage over me. They have an advantage of a very transparent atmosphere; the advantage of being able to use light in photographing tremendous areas of our country in one instant and interpreting that in terms of maps whereas we, who have to fight with this very unco-operative medium of water, have to use much less effective means of describing the situation underneath the water.

• 1125

The hydrographic service too is bending its efforts towards describing that tremendous area that is now under the jurisdiction of Canada, the continental shelves. These areas have been explored in very broad terms suitable for the safety of navigation but not in the detail which contributes to an understanding of the structure which is so important for our mineral and oil exploration.

The other aspect of our activity of course is what we call oceanographic research. This is a fairly recent responsibility of the Department but we try to keep increasing this research in terms of what we consider is of tremendously growing importance—the oceans and ocean resources—to Canada, and of course to the world in general.

Up till now we have concentrated most of our efforts on the East Coast, with the philosophy that we must first establish one centre of excellence. The complexity and indeed the potentially economic important problems of the oceans are concentrated on the East Coast—the confluence of several major ocean current systems and a large fisheries population dependent on the variability of those conditions. We are increasing our activity in this area gradually, within the limits of course that are imposed by what one would call the increasing gross national product of the country. This is demanding. Of course as our scientists increase in capability more complicated but much more effective instrumentation becomes necessary, the development of which is included in this vote. Procurement of this instrumentation from the private sector would be in vote 45.

The increase in this particular vote then is a reflection of the increased emphasis in both areas. It is certainly not in proportion to what we think is the increasing demand for such information but within the limits of course that we can obtain our share of the total moneys available to the Canadian Government.

Mr. Gilbert: Thank you, Mr. Chairman. This probably takes care of the first item.

I notice that the amount with regard to construction and acquisition is \$5,671,100. What would be the main item in that?

• 1130

Mr. Cameron: The main item in that estimate would be the procurement of launches and ships not only for ourselves but, by an agreement that we have with our sister branch, the inland waters branch, the procurement and operation of vessels in the Great Lakes for that branch. We render what little expertise we have in this area to a departmental goal, a sector goal, so that most of the moneys in here were oriented toward the procurement of vessels for the Great Lakes, and launches, of course. But a very substantial amount of this—I am not in a position to recall the exact figure, but well over a million dollars—is dedicated to the procurement of instrumentation for both navigation

and for measuring the various parameters of both hydrographic interest and oceanographic interest. So what I would say at least a million dollars—at least 20 per cent of this figure—is devoted to the procurement of instrumentation for the better understanding of these phenomena.

Mr. Gilbert: Mr. MacNeill said that the item of four million and two, which was a capital expense last year and indicates a decrease, was reflected in the decrease with regard to pollution, and he referred us to page 1. Would some of these ships that were purchased as capital items last year be for the specific purpose of pollution?

Dr. Cameron: Because a ship is such an expensive instrument, a necessary one but tremendously expensive, we cannot say that any one ship is designed exclusively for any one fine responsibility. One of the ships for which we paid in the last year was the *Limnos*, the first ship specifically designed for studies of the Great Lakes.

As you know, the Great Lakes studies are heavily oriented towards the problem of pollution, but I would not say, and I hope Dr. Prince would agree with me, that they are exclusively devoted to pollution studies. That certainly is by far their largest activity, and their largest interest is in the pollution on the Great Lakes. The other two ships which are oceanographic vessels, one on the East Coast and one on the West Coast, are studying basic oceanographic phenomena, including the movement of water along our coasts, the phenomena of mixing, the layering of the water systems, a better understanding of these and the processes by which they are developed. This leads to a better understanding of those processes that are important in understanding pollution and its spread. We do our best to plan our programs so that they can collect, at the same time, data which are applicable to many aspects of oceanography—fisheries problem, the problem of the bottom for its mineral content—so that as they study phenomena which are closely allied to pollution problems, they are also collecting information and material in other areas such as fisheries, defence information of interest to the Department of National Defence, and the economic exploitation of mineral resources on the coast.

Mr. Gilbert: Dropping down to the third item of grants, contributions and subsidies, I notice that there

is a very small item of \$8,000 which appears to be a peanut contribution.

Dr. Cameron: This refers only to the cost of our membership in the International Hydrographic Bureau. It is the annual membership fee.

For various reasons our Branch has not so far engaged in direct grants to universities engaged in oceanographic research or hydrographic research. Our main contribution has been in the provision of our ships and ship facilities to those institutions which have developed largely under the aegis of the National Research Council. The actual amount of this in terms of moneys would approach something in the order of a million dollars a year, that is, the value of the ship-time which the universities are able to enjoy. This was the way in which we decided that we could make our best contribution to the universities. Oceanography is a very expensive science. It has to compete in grants with other sciences which are not as demanding on facilities as is oceanography. We felt our best contribution was in this direction. There are substantial grants in aid of university research in oceanography generally from the National Research Council and the Defence Research Board. Unless there is an important change in philosophy, this is likely to continue for some time.

Mr. Gilbert: Mr. Chairman, I would like to thank Dr. Cameron for the information he has given to the members of the Committee. Eighty per cent of the members of the Committee are new members, Mr. Chairman, and I feel that it is very necessary that we become informed on the different branches of this Department. The help that Dr. Cameron has given me this morning gives me an insight into the type of work for which he is responsible.

• 1135

I would like to continue my questioning at the next meeting with Dr. Prince on inland waters.

The Chairman: We will meet in Room 209, West Block, on Thursday evening at 8 p.m., and this is pending approval of the House. While this is a tentative notice to the members of the Committee, the notices will be distributed immediately following approval of the House for this meeting on Thursday.

APPENDIX "B"

DEPARTMENT OF ENERGY, MINES AND RESOURCES

REVISED ESTIMATES, 1968-69

PROVISION FOR PROFESSIONAL AND SPECIAL SERVICES

\$,000's

Vote 1	DEPARTMENTAL ADMINISTRATION AND SPECIAL SUPPORTING SERVICES		
	Computing services (including Central Data Process- ing Service Bureau)	333	
	Key-punch services	87	
	Computer programming	30	
	Reimbursement of employees' tuition for evening and correspondence courses	8	
	Press clipping, technical and language editing, and public information consulting services	11	
	Protection and custodial services for buildings and equipment	25	
	Other	<u>46</u>	540
Vote 15	ENERGY DEVELOPMENT		
	Study of alternative power supply to the island of Newfoundland		28
Vote 15	MINERAL DEVELOPMENT		
	Potential federal-provincial litigation re offshore min- eral rights	100	
	Other	<u>3</u>	103
Vote 15	FIELD AND AIR SURVEYS, MAPPING AND AERONAUTICAL CHARTING (A11)		
	Building protection services	35	
	Staff training	22	
	Research in automated cartography, mapping research, computer system analysis, and employment of con- sultants	83	
	Contract mapping with private industry	210	
	Employment of private land surveyors to carry out legal surveys	166	
	Delineation of boundaries between provinces and federal domains	9	
	Other	<u>3</u>	528

Vote 15		GEOLOGICAL RESEARCH		\$.000's	
	Aeromagnetic surveys under federal-provincial agree- ments	1,107			
	Post-doctorate fellowships and consulting services . .	129			
	Aeromagnetic gamma ray spectrometer survey and development	80			
	Drafting and compiling maps, including contouring and aerogeological data	71			
	Computing services not provided by Computer Sci- ence Division.	62			
	Engineering services—drilling and bulldozing	40			
	Building protection services	37			
	Bottom sampling on the continental shelf (U.B.C.) . .	25			
	Airborne electromagnetic surveys	24			
	Other	<u>281</u>		1,856	
Vote 15		MINING AND METALLURGICAL INVESTIGATIONS AND RESEARCH			
	Post-doctorate fellowships	80			
	Building protection services	63			
	Sub-drilling for stress movement at Elliot Lake	40			
	24-hour operation of pilot plant doing research on smelting cost reductions	27			
	Cleaning of laboratories and offices at Elliot Lake	10			
	Other	<u>40</u>		260	
Vote 15		RESEARCH IN ASTRONOMY AND GEOPHYSICS			
	Operation of seismic stations and geomagnetic observ- atories	87			
	Post-doctorate fellowships	72			
	Drilling holes for seismic testing	60			
	Building protection services	29			
	Plan and design instrumentation for spar telescope	13			
	Design prairie network for Meteorite Observation and Recovery Program	7			
	Microfilming of scientific data	10			
	Other	<u>112</u>		390	
Vote 15		POLAR CONTINENTAL SHELF PROJECT			
	Seasonal operation of navigational and position- fixing equipment	95			
	Development of new towed hydrographic systems to chart Arctic waters	<u>47</u>		142	

\$,000's

Vote 40 MARINE SURVEYS AND RESEARCH

Development of automated cartography for hydro-		
metric charts	84	
Hydrographic and oceanographic equipment design		
consultants	70	
Building protection services	55	
Equipment modification, service, calibration, etc. . .	55	
Ship's pilotage, towage, wharfage, inspection, etc. . .	40	
Computing services not provided by Computer Sci-		
ence Division	30	
Other	<u>63</u>	397

Vote 40 RESEARCH AND INVESTIGATIONS ON INLAND WATER RESOURCES

Payments to gauge readers for approximately 2,200		
water level gauges	285	
Engineering Division:		
—drilling contract	150	
—photogrammetric survey	150	
—airborne control survey	80	
—seismic survey	75	
—water conservation projects consultants	30	
—soil analysis	20	
Directed research (e.g. consultants to establish hy-		
drometric grid)	135	
Great Lakes Division:		
—synoptic surveys	72	
—instrument design	30	
—preliminary ice studies on Great Lakes	25	
—pilot study — coastal jet	24	
—telemetering fixed stations	20	
—geological core dating	20	
—other studies related to Great Lakes	105	
Groundwater drilling contracts	110	
Building protection services	53	
Other	<u>69</u>	1,453

Vote 40 POLICY AND PLANNING

Development of water resource information system . .	50	
Studies of river systems in association with ADB studies or for other basin planning projects now under discussion	70	
Design of a branch publications program	30	
Other studies to obtain specific data for on-going research projects	<u>20</u>	<u>170</u>
TOTAL DEPARTMENT		<u><u>5,867</u></u>

OFFICIAL REPORT OF MINUTES
OF
PROCEEDINGS AND EVIDENCE

This edition contains the English deliberations and/or a translation into English of the French.

Copies and complete sets are available to the public by subscription to the Queen's Printer. Cost varies according to Committees.

Translations under the direction of the Bureau for Translations, Secretary of State.

ALISTAIR FRASER,
The Clerk of the House.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament
1968

STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 5

THURSDAY, NOVEMBER 7, 1968

Revised Main Estimates (1968-69) of the Department of Energy,
Mines and Resources.

WITNESSES:

From the Department of Energy, Mines and Resources: Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. G. M. MacNabb, Assistant Deputy Minister (Energy Development); Mr. J. W. MacNeill, Acting Assistant Deputy Minister (Water); Dr. W. M. Cameron, Director, Marine Science Branch; Dr. A. T. Prince, Director, Inland Waters Branch.

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and Messrs.

Beaudoin,	² Howard (<i>Okanagan</i>	³ Orange,
¹ Code,	<i>Boundary</i>),	Ricard,
Comeau,	Langlois,	Ritchie,
Danson,	Marchand (<i>Kamloops-</i>	Serré,
Gilbert,	<i>Cariboo</i>),	Sulatycky,
Grills,	Moore (Bonavista-	⁴ Turner (<i>London East</i>),
Harding,	<i>Trinity-Conception</i>),	⁵ Weatherhead—(20).

(Quorum 11)

Fernand Despatie,
Clerk of the Committee.

¹ Replaced Mr. Aiken on November 6, 1968.

² Replaced Mr. Cullen on November 7, 1968.

³ Replaced Mr. Deakon on November 7, 1968.

⁴ Replaced Mr. LeBlanc (*Rimouski*) on November 7, 1968.

⁵ Replaced Mr. Roy (*Timmins*) on November 7, 1968.

ORDERS OF REFERENCE

WEDNESDAY, November 6, 1968.

Ordered,—That the name of Mr. Code be substituted for that of Mr. Aiken on the Standing Committee on National Resources and Public Works.

THURSDAY, November 7, 1968.

Ordered,—That the Standing Committee on National Resources and Public Works be authorized to sit while the House is sitting.

Ordered,—That the names of Messrs. Orange, Howard (*Okanagan Boundary*), Weatherhead and Turner (*London East*) be substituted for those of Messrs. LeBlanc (*Rimouski*), Cullen, Roy (*Timmins*) and Deakon on the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER,
The Clerk of the House of Commons.

(Text)

MINUTES OF PROCEEDINGS

THURSDAY, November 7, 1968.

(5)

The Standing Committee on National Resources and Public Works met at 8.10 p.m. this day. The Chairman, Mr. Hopkins, presided.

Members present: Messrs. Beaudoin, Code, Comeau, Danson, Gilbert, Hopkins, Howard (*Okanagan Boundary*), Hymmen, Langlois, Marchand (*Kamloops-Cariboo*), Orange, Ricard, Ritchie, Serré, Sulatycky, Turner (*London East*), Weatherhead (17).

Also present: Messrs. Deakon and Korchinski, Members of Parliament.

In attendance: From the Department of Energy, Mines and Resources: Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J.-P. Drolet, Assistant Deputy Minister (Mineral Development); Mr. G. M. MacNabb, Assistant Deputy Minister (Energy Development); Mr. J. W. MacNeill, Acting Assistant Deputy Minister (Water); Dr. W. M. Cameron, Director, Marine Science Branch; Dr. A. T. Prince, Director, Inland Waters Branch; Dr. E. R. Tinney, Acting Director, Policy and Planning Branch; Mr. J. C. Allen, Senior Financial Adviser; Mr. R. B. Code, Senior Personnel Adviser.

The Committee resumed consideration of the following item listed in the Revised Main Estimates for 1968-69, relating to the Department of Energy, Mines and Resources:

40—Water and Coordination of Renewable Resources Programs—

Dr. Harrison supplied the Committee with the French edition of the document "Provision for Professional and Special Services" (*see Minutes of Proceedings of November 5, 1968*).

Dr. Harrison also tabled the following documents, in English and in French, copies of which were distributed to each member of the Committee: "A Major Program of Water Resources Research in Canada—Report No. 3" and "Water Resources Research in Canada—Special Study No. 5".

Dr. Prince made a statement regarding the activities in the Inland Waters Branch, and answered questions. The following officials also answered questions: Dr. Harrison, Mr. MacNabb, Mr. MacNeill and Dr. Cameron.

In response to questions asked by Mr. Deakon, Dr. Harrison undertook to supply the Committee with the following document: "Cost Estimates—Canada Centre for Inland Waters".

At 9.45 p.m., the questioning continuing, the Committee adjourned to the call of the Chair.

Fernand Despatie,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Thursday, November 7, 1968.

● 2012

The Chairman: Gentlemen, I see a quorum. I would like to call the meeting to order.

First of all, we have the French edition of the Report, that which Mr. Roy asked for last Tuesday. I would like to have these handed out at this time to anyone who would like a, French, copy.

An hon. Member: Have you any English copies?

The Chairman: I have one here, unless you have located one at the back of the room. We also have the water resources reports in French and in English as requested at the last sitting. I would like to request that these be distributed to the members of the Committee at this time.

As you will recall I called item 40 at the last meeting and tonight we will start off with Mr. Gilbert who did not finish at the last meeting.

Mr. Gilbert: Mr. Chairman, I finished with Dr. Cameron, I would like to direct my attention to Dr. Prince, the Director of Inland Waters, and direct his attention to page 10 of the estimates. I note that the estimates amount \$11,202,000 which is an increase of \$1 million over last year's estimates. Would you tell us, Dr. Prince just what your jurisdiction is and some of the work of your Department to spend \$11 million.

Dr. A. T. Prince (Director of Inland Waters, Department of Energy, Mines and Resources): Mr. Chairman, I would be happy to do this for the member.

I would first of all like to outline fairly briefly the objectives of the Inland Waters Branch. I will do this in general terms and move into further details of our operation, as quickly as I can.

Among our objectives I think the problem of an inventory and the function of gathering data on water resources in all parts of Canada, that is, our fresh resources, constitute one of our major objectives.

We are interested not only in the question of supply, the quantitative measurement of our water resources but also in the quality of our water resources in relation to what they might naturally be and to what happens to them as a result of pollution.

In assessing our inventories and gathering our data we have to look at our water resources in various categories; our streams, for example, are perhaps our most important resource, the measurement of stream flow becomes one of our principal activities.

The question of our lakes, and Canada, of course, is endowed with an abundance of lakes, constitutes another major factor in our inventory work. The Great Lakes program, which I will mention in more detail in a few minutes, is an example of what we are doing in connection with lakes.

● 2015

The groundwater resources of the country are, sometimes, the forgotten resources but are important particularly since they can be tapped and used locally and are, generally, quite unpolluted and clear sources of water.

The total aggregate of water resources on a world-wide basis is in fact much larger than the streams and the lakes existing on the face of the earth. Canada however is, somewhat deficient in this resource and we still require a great deal of information, regarding it.

Our glaciers in the Arctic regions and in the Cordillera constitute, I suppose, what one might call a frozen asset, but they are, indeed, major source of water supply for many of our rivers and are studied in the matter of inventory and other characteristics.

Another aspect of our work, is the question of resource conservation. The matter of flood control is extremely important in many parts of the country. The regulation of flows, the harnessing of hydro resources for power generation, all constitute part of the resource conservation area.

The question of research is a major function of the branch and of the Department; in our case it is applied to the science, engineering and technology of water. Our research activities are basically in support of govern-

ment policies. They are mission-oriented for application to immediate problems and to long term problems.

In our research activities, we endeavour to develop expertise of a type that can be useful in many ways. In this connection we are required to work with, and to re-act with the private sector through industries and consultants, with university staffs and provincial agencies, so that our research activities are fairly broad in their applications.

• 2020

We are also required to undertake, certain, co-ordinating work in connection with technical programs within the federal government structure to relate meaningfully and profitably with other workers in the field of water throughout the government organization, and to integrate as effectively as we can in the problems that are presented to us.

Our activities, of course, relate to the general resource picture and particularly to the water pollution problem as it is presented to us today. Basically and in summary of our objectives I think we should say that we are interested in the protection and the improvement of our environment in so far as water is concerned for the benefit of society and for the economic benefit of society as well as its environmental benefit.

These, Mr. Chairman, are the principle objectives of the group. I would like to move along to some further details in connection with the relationship of our work to other departments and to other groups. Dr. Cameron referred to the way in which we co-operate with his branch in the matter of ships, and I would add that we reciprocate to some extent by providing the operation of tidal measurement level of stations around the coast of Canada as part of the extension of our Water Survey of Canada network.

Mr. MacNeill and Dr. Tinney have mentioned the close relationship between the Inland Waters Branch and the Policy and Planning Branch and our overlapping of activities or intergrowing of activities is quite intense.

The chief differences between the activities of policy and planning and ourselves is the difference between the non-technical and the technical field. We are primarily interested in the technological aspects, whereas policy and planning is interested more in the economic and socio-legal jurisdiction side of water.

Within the Department we have interaction with the Geological Survey in certain geophysical work that we carry out, particularly in the field of infra-red scanning techniques which are extremely useful in elucidating certain problems in pollution along the shores of the Great Lakes and other areas of the country. Similarly we have quite effective and detailed interaction with the Department of National Health and Welfare, with the Fisheries Research Board and the Department of Fisheries and with the Department of Transport.

As to the organization of the Inland Waters Branch and the programs that we are conducting, I might say that we are perhaps the most highly decentralized unit within the Department. We have roughly five hundred of our number outside of Ottawa, and about 250 within Ottawa. Our numbers at the moment on establishment, that is the size of our establishment is approximately 740 people. We are down 100 from the level shown on the chart here due to some staff transfers and due to effective freezing of some of our establishment.

When I say that we are largely decentralized, I am advised, but I must confess that I have not visited all of them, that we have some thirty three locations throughout Canada extending from the two coasts and clear up into the Arctic. There are six main centres, regional or district centres, from which smaller groups, offices and suboffices fan out to cover the country. So our work is carried into all regions of Canada and is not by any means confined to the Ottawa region.

• 2025

Within our organization we have five divisions and the programs are developed within the activities of any of these divisions. The Water Survey of Canada is our largest and most highly decentralized group and was referred to last time at the last meeting in connection with some discussion. It may have appeared in the record as the hydrometric survey and if so we are referring in that to the Water Survey of Canada.

Its principal activity is the measurement of stream-flow, sediment transport by streams, and assists many other aspects to our program because of its far flung field capability. The Engineering Division of our Branch is responsible, as the name implies, for activities concerning many of the conservation and

control programs and has been engaged in some very large activities and continues to be so. Activities such as the Winnipeg Floodway, conservation work in other parts of the country; it is engaged at the moment in directing studies concerning the Atlantic Tidal Power Programming Board and is generally the effective engineering and implementation group of the Branch.

We have a scientific organization, the Hydrologic Sciences Division, that is concerned with studies of ground water of glaciers, of some of the basic scientific investigations of water as a material, and it acts as a more or less basic research group, backing up the other activities of the establishment.

Reference has been made to the Great Lakes Division, which is located now at the Canada Center for Inland Waters in Burlington. I will say a few words about that if time permits. We have a Water Quality Division, which is concerned primarily with the pollution problem, but which has other activities related to the treatment of water for water supply.

The Great Lakes Division will be joined in due course by the Water Quality Division at the Canada Center for Inland Waters when the facilities are completed.

We expect in due course, to establish a hydraulics division which will also be located at the Canada Center.

Mr. Chairman, I do not wish to go on unduly, but would request a minute or two to comment on the Canada Center at Burlington. It was discussed to some extent with the members at the last meeting and in connection with a question regarding its relation to one university, namely McMaster University, I endeavoured to indicate that it was not to be tied in with any one university, but that its activities were broadly based, extending to a number of universities around the Great Lakes area; I would not like to leave the impression that that is the limit of the extent of participation.

The Canada Center for Inland Waters is a country-wide organization in so far as its interests are involved and the participation that we expect and hope for will extend from coast to coast.

I would point out that we are in the process of establishing an advisory committee which will have representatives from the Maritime region and from British Columbia

and from all points in between; that it will represent the university community, the private sector, and the provincial governments on a very representative and, I hope, effective basis. This committee has not yet been nominated, but we expect shortly that we will have this in action.

I would be quite happy to discuss at some length the origin and the purpose of the Canada Center. It is one of our large organizations, which has been forecast to cost in so far as property improvement in the marine and structures sense a total of some \$24½ million. This is an investment which the Department is making on behalf of a vitally important area of the country, on behalf of our large lakes, in the Great Lakes area, and for the extension of capability, in due course, to the study and the better management of the large lakes extending from the Great Lakes region to the Arctic area of Canada.

• 2030

The purpose and the output of the Canada Center for Inland Waters might be summarized by saying, we are interested in improving the planning and management of the Great Lakes and other large bodies of water in Canada. We wish to provide data and advice concerning the distribution of pollutants in large bodies of fresh water, a problem of particular importance to Canada.

We wish to aid in devising more effective methods for pollution abatement, we wish to identify the most harmful substances either being created or about to be created by industrial operations. And, to make sure that the dollars, spent on the abatement of pollutants, are spent in the most effective way to suppress the most harmful materials.

That, Mr. Chairman, concludes my statement regarding our activities. Thank you very much.

The Chairman: Thank you, Dr. Prince. That was, indeed a very good answer. Mr. Gilbert, in view of the length of that answer, if you wish to ask an additional question at this time I would permit it. I know that you asked it to draw out information, which is certainly of benefit to the Committee. We are very grateful to Dr. Prince for his explanation. I will allow you another question, if you would like.

Mr. Gilbert: Fine, thank you.

The Chairman: I think at this time I would also like to congratulate the members of the Committee on turning out, as they did tonight. I think it important to note, we have an 85 per cent turnout of the Committee. I want to thank all members for this. Mr. Gilbert?

Mr. Gilbert: Dr. Prince what, if anything, is your Department doing with regard to clearing up the pollution problem in Toronto waters—in Lake Ontario?

Dr. Prince: Mr. Chairman, I might respond to that by saying...

Mr. Gilbert: Our beaches are polluted in Toronto and...

Dr. Prince: We are not involved, in our Departmental program, with the enforcement or surveillance of localized pollution, where, obviously, shore activities, municipal and industrial, are involved. This, as far as our terms of reference are concerned, constitutes management and is a provincial matter. We are certainly, interested in the sort of thing, you describe. Wherever we find pollution in the course of our work and investigation. We establish very close and effective communications with the provincial agency, with the Ontario Water Resources Commission in this instance, and endeavour to co-operate with them. The prime responsibility for pollution of that type is not part of our area of activity.

Mr. Gilbert: Thank you, Dr. Prince.

The Chairman: Mr. Comeau?

Mr. Comeau: Thank you, Mr. Chairman. Briefly what is the work of the Bedford Institute of Oceanography, it comes under you does it not?

Dr. Prince: I am sorry, Mr. Chairman, that comes under Dr. Cameron's sphere in the Marine Sciences Branch. I can refer the question to him, if you wish?

• 2035

Dr. W. M. Cameron (Director, Marine Sciences Branch, Department of Energy, Mines and Resources): The Bedford Institute of Oceanography is the eastern operational unit of the Marine Sciences Branch. The activities of the Branch are centralized in three separate areas, a central region, an eastern region and a western region. The Bedford

Institute is the centre of operations for the eastern region. Its area of responsibility is the Western Atlantic ocean and the Eastern Arctic, a very large area indeed.

Its activities include the basic and prime responsibility of the Branch, namely nautical charting, but a very large element of the Institute is engaged in oceanographic research. This involves the broad study of the oceans, the effect of winds on the water in driving it in certain directions, the development of waves, the dissipation of energy to and from the atmosphere, into and out of the water, also the structure of the water itself, its movement, and its chemical content inasmuch as it affects and is affected by biological activity.

The temperature distribution has an important effect on the distribution of fish, and on many defence problems. The Institute also studies the character of the bottom, not only its depth but also its character of the kind of material that is made up of its permeability both to sound and to other energy. It then undertakes basic studies of the geophysical properties as far down as it can below that surface, down to the mohole if possible. So it ranges in its studies of the oceans, from the boundary between the atmosphere of the sea right down into the upper crust.

Our work embraces a tremendously broad group of specialists, the engineers who do the surveying, scientists of various categories, physicists, chemists. I might point out that the Bedford Institute itself has a strong element of the Fisheries Research Board completely integrated with the Institute, which undertakes the biological studies of the oceans. A very closely coordinated program is mounted by the representatives of my Branch and the representatives of the Fisheries Research Board.

Although this is a long answer, the Bedford Institute, in brief is responsible for studying all aspects of the sea, considered to be of economic defence, or other importance to the Canadian economy.

Mr. Comeau: Thank you very much, for enlightening me. Has any research, or are any charts available,—recent charts, as far as the Bay of Fundy is concerned. I am talking about hydrographic charts. Have any recent studies been done on the Bay of Fundy or St. Mary's Bay? Do you know?

Dr. Cameron: The Bay of Fundy was finally surveyed three years ago, I think, so we should by now have modern and revised charts out on it; I am not quite certain of the number. I could find out and report to you, in fact, if you like, give you the latest edition.

Mr. Comeau: And the same for St. Mary's Bay?

Dr. Cameron: It would be a part of that study, yes.

Mr. Comeau: I have one other question. Is there a study going on to harness the tides, let us say, to produce power?

Dr. Cameron: Yes, there is a very comprehensive study going on under this Department not, however, under my jurisdiction in the Branch. Mr. MacNeill of the Atlantic Tidal Power Programming Board—our Deputy Minister is the Chairman of this Board—would, perhaps, be best qualified to give you the details.

Mr. Comeau: Mr. MacNeill could you give us an idea of what is going on with regards to...

Dr. Cameron: I am sorry, Mr. McNabb would be even more appropriate.

An hon. Member: We are getting into another vote.

Mr. J. W. MacNeill (Acting Assistant Deputy Minister (Water) Department of Energy, Mines and Resources): This falls within the energy sector or the water sector supporting the study, but the program is conducted very largely by the energy sector and Mr. McNabb could answer your question.

Mr. G. M. McNabb (Assistant Deputy Minister of Energy, Mines and Resources (Energy Development)): Mr. Chairman, this is a co-operative study involving the provinces of Nova Scotia and New Brunswick and the federal government. They are the Atlantic Tidal Power Programming Board established with five representatives and the Deputy Minister of this Department, as the Chairman, two other representatives from the federal government and one from each of the participating provinces.

• 2040

They give the general broad direction to the study and under that board there is an Engineering and Management Committee with

a similar representation from the participating governments.

The Committee is charged with the actual carrying out of the study, the checking of its operations and the hiring of consultants. The Committee established a study office in Halifax and hired a study director and have a staff of approximately 15 people.

The terms of reference called for an interim report at the end of 1967 and a final report by the end of this year and the budget allotted was \$1½ million.

I would expect that there would be an extension in the time for the final report and I would expect it now in the summer of next year.

There were a great number of sites being looked at, as you might expect, in the Bay of Fundy, you mentioned one area—the Annapolis Basin, St. Mary's Bay—there are areas in the Minas Basin, Shepody Bay, Cumberland Basin, all of these had to be looked at and this was done last year and in the early months of this year. There were a number of consultants hired. We had consultants, Acres Limited looking at the Shepody Bay, I believe, we had a consulting firm of Svereyer Nenniger and Chenevert Inc. and a local firm from the Maritimes associated with them looking at St. Mary's Bay and Annapolis Basin and we had a consortium of consultants, Harza, Chicago, Montreal Engineering, Shawinigan Engineering and Balfour Beatty of England all combined, looking at the large area of the Minas Basin.

These consultants, have completed their reports to the Committee, the Committee is now assessing all these reports, selecting the better looking of the number of sites chosen, deciding what additional work has to be done. In fact we have done additional work and we would expect that all information would be in by the end of the year and the remaining six months would be the compilation of all this data and the preparation of the final report.

Mr. Comeau: Thank you very much. Is there time for one more question?

The Chairman: Yes, one more.

Mr. Comeau: I do not know who to address it to. Recently the Annapolis River in Nova Scotia was even thought to be polluted. I am wondering if anything has been done by your Department in this regard?

Mr. MacNeill: I could try to comment on the question. I am not sure if the Annapolis Valley was surveyed from the point of view of pollution or water quality recently. It may have been.

I mentioned on Tuesday that we were coming to the end of a two-year study of water resources in the Atlantic region. This very broad study has been undertaken under a joint federal-provincial supervisory committee, representatives of various federal agencies and of the four Atlantic provinces have participated. The studies themselves have been undertaken through two major consulting consortia and among other things the studies have involved surveys of water quality in a number of rivers, not from the point of view of coming up with solutions but from the point of view of getting a feel for the major emerging water pollution problems in the Atlantic region so we can establish some system of priorities in tackling them. A large number of rivers were surveyed with that in mind and the Annapolis River may have been one.

• 2045

Mr. Comeau: Thank you.

The Chairman: Mr. Korchinski.

Mr. Korchinski: I was interested a few minutes ago in your remarks in regard to underground water levels and I would like to know whether, in your research over the last few years, you have found that the underground water level has generally dropped and if this is the case what, in your estimation, has been the cause of this and what measures have been taken to offset this, if any.

Dr. Prince: The question of dropping of level of water tables is largely a matter of over-pumping of aquifers beyond the rate at which they are naturally recharged where heavy demands are placed on ground water locally you establish a cone of depression and the water levels can get down to a point where it is not economic to pump to the surface where they can, in some circumstances, become saline but the question of whether the water table, as a whole, throughout large reaches of the country are being depressed, I would have to say that we have no evidence of that because it is related primarily to the recharge.

Many of the areas in Canada are fairly shallow and are affected fairly effectively by precipitation and by recharge because of the

dominance of glacial deposits covering the surface and in which many of our ground water resources reside.

We are somewhat different from some of the areas in the southwestern United States where water has really been mined rather than used as a rechargeable resource but I am quite sure that locally in some regions there are problems of the kind you mentioned.

Mr. Korchinski: Let me get above ground here and then go on to the question of the water level of the Great Lakes. Several years ago there was great concern over the level of the Great Lakes for several reasons. One is the shore line and the berths and the fact that boats could not take the full cargo that they might have been expected because of the level of the lakes and as a matter of fact there was some considerable controversy between Canada and the United States. Chicago was taking a lot of water.

We did not get to the level where we were really fighting but there was great concern on both sides of the border because of that level. Since that being the case, now there is a certain amount of work being undertaken by other departments of the government, for example, there may be projects under ARDA, maybe another department which dams off and stops the flow of water, maybe not in our immediate area but in the far West and so on. Is there any co-ordination of this type of work so that the maximum benefit may resolve eventually so that one department does not work against the other department or one gets the benefit and do not "give to Peter and take away from Paul".

Dr. Prince: Mr. Chairman, could we clarify whether reference here is to the Great Lakes or to the practice in general.

Mr. Korchinski: I was using the Great Lakes as an example of what I think everybody is aware of.

Dr. Prince: Yes.

Mr. Korchinski: I say that this could happen in any other area where the water levels drop and whether your Department is concerned with this type of work and other departments are working on stopping the flow in certain areas, restricting it and then allowing it to flow and so on and whether your Department is concerned with that type of activity that other departments are actively engaged in.

• 2050

Dr. Prince: Mr. Chairman, I would say that we are concerned with it, that the question of what one department does in relation to its program is really the substance of concern of this Department in connection with its co-ordinating role of federal government activities relating to water. We are certainly trying to co-ordinate and co-operate so that we are not "robbing Peter to pay Paul". There is an interdepartmental committee on water which I think was referred to by Mr. MacNeill at the previous session and the sort of thing that you are speaking about really falls under the heading of competitive requirements and uses of water. It is the sort of thing that proper comprehensive basin planning should avoid,—it is the type of thing this Department is urging be done more frequently in the future. I think the record of this hearing shows that Mr. MacNeill has discussed this at considerable length, in earlier meetings. I do not know, Mr. Chairman, whether Mr. MacNeill would like to add to this reply.

The Chairman: Mr. MacNeill?

Mr. MacNeill: Yes, Mr. Chairman, perhaps I could say a word or two about the general question of co-ordination. One of the reasons the Department of Energy, Mines and Resources was established, two years ago, was a growing recognition of the need—for more effective co-ordination—within the federal government on water problems. Last Tuesday we distributed a report on the administration of water resources in Canada. Those of you who have had an opportunity to look at it, will have noticed the large number of federal agencies and in each province also—the large number of provincial agencies concerned with different aspects of water resources.

This is one of the factors that prompted the establishment of the Department. The Minister of Energy, Mines and Resources was explicitly, by legislation and otherwise, asked—directed to—co-ordinate federal water policies and programs. In the past 18 months we have taken a number of initiatives to achieve that goal. It is not an easy goal to achieve, by any means.

One of these was to establish, I should say—the government has established on our recommendation, an interdepartmental committee on water—a committee chaired by the Assistant Deputy Minister for water is made

up of the senior water man in each of the federal agencies concerned with water. In addition, it has representatives from the Department of Finance, the Treasury Board, the Department of External Affairs and observers from the IJC.

This committee has a secretariat and has established reporting and other mechanisms and it is establishing further reporting mechanisms,—and other mechanisms to secure effective co-ordination of programs.

We have also taken a number of initiatives, at the Federal-Provincial level, and have proposed the establishment of a national advisory committee on water pollution. I mentioned this a week ago today, and observed that this proposal,—which had been made by the Minister 18 months ago,—was still under consideration—active consideration—by and with the provinces. The national advisory committee on water pollution is the kind of proposal, that will require the support, the co-operation, and the participation of all 10 provinces to be successful.

• 2055

Also, we have established co-ordinating machinery with various individual provinces. In the case of the Province of British Columbia we have within the context of the Fraser River Agreement established a senior advisory board made up of the senior water officials—both federal and from British Columbia. In the case of the Prairie Provinces,—we have two; the long established Prairie Provinces Water Board which secures a measure of co-operation and co-ordination between the federal and provincial agencies in that area, also the Saskatchewan-Nelson Basin Board responsible for the direction of the new Saskatchewan-Nelson Basin study and composed of the senior water people from the three provinces and the federal government.

We have been considering a new co-ordinating mechanism—at the official level—with Ontario, and with Quebec. A moment ago I mentioned the supervisory committee on Atlantic provinces water studies—with the Atlantic Provinces. This is co-ordination at a fairly broad policy level, Mr. Chairman.

In the context of each technical program, as Dr. Prince has mentioned, there is a need for co-ordination, this co-ordination is most properly and most effectively secured through the technical people themselves. In the case

of many of Dr. Cameron's programs there is a need for international co-operation, again, this type of co-ordination is secured through technical bodies established for that purpose.

I do not want to leave the impression, all is well on this front. It is not. It is a very difficult task, a continuing task, one that we are trying to tackle.

Mr. Korchinski: May I ask just one more question, I then will pass. It is in connection with the Saskatchewan-Nelson project. Are you engaged merely as overseers or are you deeply involved in the whole study itself? Because my understanding is—and I may be wrong,—is that your Department is not the department in charge of this study?

Mr. MacNeill: The Saskatchewan-Nelson Basin study is being undertaken under the authority of a federal-provincial agreement. This agreement was signed by the federal government and the three Prairie provinces. That agreement set up a Saskatchewan-Nelson Basin Board to oversee and direct the study. It is the responsible organ for the study. That Board is made up of a Federal Chairman, I am at the moment the Acting Chairman of the Board representing the Department of Energy, Mines and Resources, and one other federal official in the person of the Director of the Prairie Farm Rehabilitation Administration also of the senior water man from each of the three Prairie provinces, Alberta, Saskatchewan and Manitoba.

The Board has engaged a study group—a study director and a small study group—to effectively plan and co-ordinate the various component studies. These studies,—the component studies are being undertaken through existing federal and provincial agencies. We are making a sincere—I think,—so far,—a successful attempt not to duplicate existing skills and capacities. The \$800,000 program for the current year is being undertaken almost entirely through the resources of PFRA, our own Department, the Alberta Water Resources Group, the Saskatchewan Water Resources Commission and the Manitoba Water Resources Group,—all this through contracts let by the study board. We let contracts to these existing agencies up to the limits of their capacities and they undertake the work under the co-ordination of the study board.

Mr. Korchinski: Could I just ask one more question here?

The Chairman: Mr. Korchinski, this will have to be your last one. Would you finish with this because...

Mr. Korchinski: Yes. Could I just ask one question? What is the prime purpose of this study, what are the various groups concerned—what particular subject are they studying—and I will finish with that.

Mr. MacNeill: The Saskatchewan-Nelson Basin study is basically a water supply study, it is not a comprehensive water resources study. It is basically a water supply study. To be brief, the objective of the study is to determine the amount of water that could be provided at different points in the river basin under different circumstances one of which is the existing river with existing storage. What can we do by improving the regulation of existing storage?

• 2100

A second increase would come from the development of new storage, new storage reservoirs on the rivers. The South and North branches primarily also in the headwaters, mainly, in Alberta.

What additional supply can be provided through intra-basin diversions, that is—possible diversions from the North Saskatchewan to the South Saskatchewan in Alberta? What additional supplies can be provided by diversions into the basin from outside the basin, from branches of the Athabasca and even, in the final step, from one of the branches of the Peace. The basic question is—what level of supply can be provided at these various points downstream assuming these different phases of development?

Mr. Korchinski: Thank you.

The Chairman: Mr. Deakon.

Mr. Deakon: Mr. Chairman, I think this question could be, appropriately, put to Dr. Prince. It is in reference to the research and investigation of water resources. I was wondering Dr. Prince if you can tell us what projects, if any, of a research nature are being presently contemplated for the Ontario area specifically, in regards to the water pollution problem and more specifically in the Toronto area. If there are any contemplated projects, what amount of monies are being allocated for these projects?

Dr. Prince: Mr. Chairman, I think for the question of water pollution projects, *per se* for the abatement of pollution in the Toronto region, I would have say that we do not have any programs that are specifically directed to that aim. In the Toronto region, we do have at Burlington, the Great Lakes division program which has, primarily in the past two years, been directed towards support of the International Joint Commission study of the lower lakes themselves.

Our jurisdictions on specific abatement problems within the Toronto metro region just do not exist, there is no real way our mandate can be involved there other than as a consultant to provincial agencies.

Mr. Deakon: In view of your answer, Dr. Prince, has the federal government or a department of the federal government taken the initiative in getting these groups of various overlapping jurisdictions together, in order to discuss these problems and determine methods that would have them resolved? I have so often heard that there are all kinds of overlapping jurisdictions. What is being done, and who is taking the initiative to do this?

Dr. Prince: Mr. Chairman, the question of overlapping jurisdictions could, I am sure, occupy the whole evening. Perhaps I might suggest we look at the matter in terms of police jurisdictions. There is a federal police force, the RCMP, which does not necessarily go out and ticket cars on the streets of Toronto or prosecute someone for swiping an apple on the corner. There are levels of jurisdiction, and responsibilities. The federal contribution to this area of pollution in the Great Lakes must be discussed in similar terms to police jurisdictions. We are not, in metro Toronto, in the field of local enforcement but do have good and continuing relations and reactions with the Ontario Water Resources Commission.

• 2105

For example, in the International Joint Commission reference on pollution of Lake Erie, Lake Ontario and the upper St. Lawrence there was a definite agreement made between various agencies. The Ontario agency OWRC was responsible for contributions to studies connected with close inshore surveillance of the Great Lakes;—that is, the source of pollution from industry, from municipal

out-falls and so on was the part of the activity assigned, under the reference, to the Ontario agency.

Energy, Mines and Resources and the Department of National Health and Welfare under the agreed planning and studies assignment looked after the main body of the lake, in addition to that the Department of National Health and Welfare people were responsible for the area from the Bay of Quinte on into the upper St. Lawrence. In this particular instance, there was a clear cut decision to avoid overlapping, to have complete communication and interaction between the agencies.

At the present time the agencies, that is those in Canada, both provincial and federal, together with US federal and state agencies, are in the process of preparing a joint report, a very large and definitive report on the pollution problem of the Great Lakes. This does not include the question of pollution of river beds leading into the Great Lakes or of pollution within metropolitan areas, except insofar as their out-falls do affect the lakes. Mr. Chairman that is my response to the question.

The Chairman: I believe, Mr. MacNeill would like to add something.

Mr. MacNeill: Mr. Chairman, I wonder if I could take up this point, for a moment. Dr. Prince has rightly pointed out, we are dealing here with an area of divided or shared jurisdiction. However complicated this might make things, it is none the less a fact that we here have to understand. I mentioned another aspect of this problem, I would like to discuss the question of national as opposed to provincial or local interests. This is a very subjective matter, but—I think—one that we should bring out.

Last week, I mentioned that one of the things we have tried to accomplish over the last few months, was to identify the major emerging problems and issues in the water resources field in Canada. We did this partly to set out own priorities,—where, by and large, we should focus our interest? In this, we were assisted by a number of studies—including the fourth annual review of the Economic Council of Canada. That review, you will recall, attempted to forecast population distribution in Canada and associated industrial patterns through to 1980 and pointed out that by 1980, I think, a third or so of Canada's population would reside in three areas; the lower Fraser Valley,—looking at it

from a water point of view—the lower Fraser Valley, the Great Lakes region and the lower St. Lawrence and Ottawa. It also pointed out, I think, that by 1980 around two thirds of Canada's population would be located in cities of 100,000 or more. If you relate this to a map of Canada, you will find that these cities are located on our major inter-provincial and/or international river basins. The Fraser River is the one exception—it is intra-provincial. Apart from that, you have the Saskatchewan-Nelson in the prairie provinces,—all of the major cities located on it, also the Great Lakes, Ottawa, and St. Lawrence in Ontario and Quebec. You have the St. John River and one or two other big rivers in the Atlantic region.

• 2110

It so happens that these major inter-provincial and international water bodies are the water bodies in which there is significant federal jurisdiction, on fisheries, navigation, agricultural—agricultural water uses that is, by virtue of the fact they are inter-provincial or international.

One of the biggest or the biggest water problem that we are going to face for the next few years is in the Great Lakes—we have decided, and this is reflected in the estimates to focus a great deal of the federal effort on the Great Lakes as a whole. This is because the Great Lakes are significant from navigation, from fisheries, because they are the heart of the fastest growing economic area in both Canada and the United States—they are international, they are a water body in which we do shared jurisdiction between the federal government and the provinces in Canada, and the federal government in the United States.

We have decided to focus our effort on the most difficult technological problems associated with pollution in the Great Lakes, and hence the Canada Center for Inland Water. And the most difficult planning problems, comprehensive planning for the Great Lakes as a whole, initially in co-operation with the provinces, alternately I suppose in co-operation, and I hope in co-operation with the States. The implication of this is that the more local problems—I do not mean local in the sense that they are not in themselves big. Toronto problems and the problems of Toronto beaches are no doubt very important, but the more local problems are primarily viewed as matters of provincial or local interest.

The Chairman: Mr. Deakon?

Mr. Deakon: Mr. Chairman, I understand exactly what has been said, and this is exactly the question being posed refers to. Everytime the question is posed there is always a back-lash of this jurisdictional problem. I am fully aware of the jurisdictional problem. I would like to see the government as such, the federal government take initiative in getting these various jurisdictions together and resolving the problem. This is the point I am bringing up.

The question I asked here about, where there any funds allocated, and if such, how much funds were allocated for the Ontario area and more specifically, the Toronto area for purposes of research? I did not get the answer. How much money, I want to know how much money?

Dr. Prince: Mr. Chairman the funds for that if we could relate them to the Canada Center for Inland Waters at Burlington would have to be broken out, I can give you a rough idea from memory about them. On capital costs...

The Chairman: If I may interrupt here Dr. Prince, Dr. Harrison has suggested that he might give you a breakdown of this in a report Mr. Deakon, if this would be satisfactory to you?

Mr. Deakon: Thank you, Mr. Chairman, very good.

The Chairman: Did you have another question Mr. Deakon?

Mr. Deakon: No.

The Chairman: Mr. Weatherhead?

Mr. Weatherhead: Thank you, Mr. Chairman. Further to the questions of Mr. Gilbert and Mr. Deakon, I understand Dr. Prince earlier stated that industrial, municipal pollution and its abatement was under the provincial control and I was wondering Doctor just what types of pollution would be under federal control in say the Lake Ontario Area? Are there any types of pollution in Lake Ontario over which the federal government does have some abatement control?

Dr. Prince: Mr. Chairman, there is legislation concerning the matter of oil spews and oil pumping under Department of Transport legislation. I believe there is similar provincial legislation covering off the same sort of

thing. The question of legislation concerning waste from pleasure craft I believe is proposed, if not in effect, from the Department of Transport as well. The normal municipal and industrial outfall type of pollution is under provincial jurisdiction. The question of radio-active waste again falls under federal jurisdiction. But even that I believe, in the case of Ontario has been passed over to the Province for enforcement.

Mr. Weatherhead: What proportion Doctor, of say the waste from ships and that sort of thing, what proportion would that bear to the industrial municipal proportion of it. The industrial municipal pollution I gather would be rather small. Would you have any idea in say, Lake Ontario?

• 2115

Dr. Prince: I would only be guessing at the moment, but it is very small, I think it has been reckoned in the Great Lakes for all ships afloat that it is something equivalent to perhaps a city of 100,000 people. That is all.

Mr. Weatherhead: Thank you, Mr. Chairman.

The Chairman: Next we have Mr. Ricard.

Mr. Ricard: As far as inland rivers are concerned what is the degree of responsibility of the two levels of government? That is provincial government, and federal government?

Mr. MacNeill: You are talking about jurisdictional responsibility are you, sir?

Mr. Ricard: Yes.

Mr. MacNeill: For inland fresh waters?

Mr. Ricard: Yes.

Mr. MacNeill: This is a question on which there is no definite answer. There are—I was going to say there are as many views as there are constitutional experts, but that is not quite correct, there is a consensus in some areas. I would say that very briefly the federal government is recognized as having jurisdiction over fisheries, transportation or navigation and agricultural water uses. It has responsibility in respect of international waters, the licensing of development on international waters and responsibility—some responsibility in the case of interprovincial waters. Provincial government is responsible for the other uses. Municipal, industrial, agricultural

too that is concurrent, recreation, fish and wild life, and so on, are basically and primarily under provincial jurisdiction. That is the jurisdictional picture.

From the point of view of proprietary right, the ownership of the resource—the provinces have the proprietary right over the resources. They own the resource. By virtue of that they license use. When it comes to the regulation of pollution, they are the effective organ in the licensing of industrial water use and therefore in pollution control, from the point of view of regulation.

Mr. Ricard: There is no higher degree of control or responsibility from the federal government when it is a navigable river or is it about the same?

Mr. MacNeill: Yes. Now, if the river is navigable the federal government can greatly influence the development of the river.

Mr. Ricard: It does not have total authority. It is wise to conclude then that there is no possible effective way of pollution control work unless there is perfect co-operation between the two levels of government.

Mr. MacNeill: This is the dilemma we face, yes.

Mr. Ricard: All right.

Mr. MacNeill: We want to take a comprehensive approach, we want to take a total approach, but it is divided jurisdiction so therefore we have to co-operate.

Mr. Ricard: Thank you.

Mr. Danson: A supplementary on that, Mr. Chairman.

The Chairman: Go ahead.

Mr. Danson: I just wondered to what extent it is a dilemma and what degree of co-operation there is and what action you are able to take jointly with the provincial jurisdiction? Is this presenting a genuine problem and you cannot get to grips with problems because of these jurisdictional differences? Is there a high degree of co-operation or is there a low degree of technical competence on provincial levels, or does this vary across the country?

Mr. MacNeill: I think it would be fair to say, Mr. Chairman that we are making a very significant progress in achieving a much higher degree of co-operation with the provinces.

• 2120

As I indicated a few moments ago in spelling out the co-ordinating machinery that had been developed recently in the last 18 months, I think we are making progress in this regard, very significant progress.

Mr. Danson: But fairly recent, is it?

Mr. MacNeill: No. In the technical field there has always been co-operation and co-ordination. We are talking about matters of degree, problems are getting more complex and more difficult and so we have to have more effective co-ordination at different levels.

Mr. Danson: Thank you, very much.

The Chairman: Mr. Deakon asked for a supplementary.

Mr. Deakon: I just want to add to this, Mr. Chairman, surely when the health and welfare of the nation is involved, jurisdictional aspects should be secondary and the federal government as such should take the initiative. There must be some way in which we can bring pressure to bear on the enforcement agencies to have these matters resolved.

The Chairman: Mr. Deakon I have been informed that this is really not a question for the men before you at this time.

Mr. Deakon: I will speak to Mr. Greene when he comes here. Not privately; right here.

The Chairman: We will put you on the list of the Minister when he comes.

An hon. Member: The Liberals have a tiger in their tank.

Mr. Orange: Toronto could put some moral persuasion on the Province of Ontario to work more closely with the federal government in this respect.

The Chairman: Mr. Howard and then Mr. Sulatycky...

Mr. Howard (Okanagan Boundary): It seems to me that we are asking the Civil Service for something that they are not equipped to do in this matter of jurisdictional problems, that the ultimate decision has to be made at the political level, and that if we are to get the provinces together with the federal government that so far it seems to be the

provinces that are dragging their feet, and it is our job as politicians to organize the pressure on the political people in the provinces to do this.

This was the only way we were able to get any action in British Columbia.

My question is; Do you not agree that you are in a difficult position when you are trying to deal at the Civil Service level with your counterparts in the provinces, that the politicians should be really taking over the function of selling it in the community.

Dr. Harrison: Mr. Chairman, if I might just comment on that. This is a question that is fundamental to any of the resource development problems we face in this country where the resources are generally speaking in the ownership vested in the provinces themselves. Federal agencies have to react according to the political realities of the situation as determined by people like yourselves, rather than by us.

Generally speaking we on the technical, administrative level have pretty good co-operation with our opposite numbers in the provinces.

Mr. Howard (Okanagan Boundary): So the hold-up is not the technical level.

Mr. Danson: We hope that we, as politicians, are not confined to realities.

The Chairman: I think the Committee would agree that some of the questions lately have been of a political nature and perhaps we should put them over until Mr. Greene is before us.

Mr. Sulatycky: Mr. Chairman, there is no problem of jurisdiction in the town sites of Banff and Jasper which are both peopled by 3,000 or more people, and yet in both of these town sites raw sewerage has been dumped, in one case in the Bow River and in the other case in the Athabasca River. Why cannot the people in the government who are so concerned about water pollution have some persuasive effect on the other people in the government who have jurisdiction over Banff and Jasper?

Mr. Langlois: We are still in politics.

Mr. Sulatycky: Mr. Chairman, one other question if that one cannot be answered satisfactorily. Is there any present research into pollution of ground-waters supplies being done by the federal government?

• 2125

By way of background I might mention that in the province of Alberta there is growing concern over the injection the various chemical agents into the ground in the process of obtaining either the gas or petroleum resources from beneath the ground surface.

Mr. Prince: Mr. Chairman, there are possibly two replies to that. One is that one of our main studies in our groundwater work, our hydrogeological work, has been the study of groundwater flow systems. Much of this work has been done in the prairie region over the past many years.

In many ways this is fortunate, because this has given us some background in how water at depth circulates in the earth. Where questions of pollution arise, such as the examples you name, and possibly others where there is disposal of brines and waste salt from the potash industry, we are already involved in studies of that type.

Furthermore there is the problem, particularly on the East coast of the invasion of salt water from the sea, where overpumping of aquifers occurs; this is a form of pollution that has to be overcome through better management of the withdrawal of ground water from depth, so that I would say there is research background connected with this which we hope to put into harness as these problems arise.

Mr. Comeau: Mr. Chairman, two questions. First: what are the major sources of pollution that cause, etc...?

Mr. Prince: If I understand the question—what are the major sources of pollution? There is the major loading of industrial pollution from domestic and human wastes. This is one of the principal sources. On the industrial side, I suppose the largest single polluter would be the pulp and paper industry because of the enormous tonnages of material that are treated by the industry and the disposal of enormous tonnages of waste, most of which are contributed to the receiving waters.

The food processing industries and the disposal of their wastes present a very large problem to many of the rivers, although efforts are made in many of these instances to minimize this effect by treatment in lagoons and by processing. However they are not entirely effective, so I would say that the two industries that I mentioned are very large polluters.

The Chairman: Mr. Comeau has a segment here—I would prefer to...

Mr. Comeau: This is a different subject.

The Chairman: Is it a related one? Fine.

Mr. Hymmen: What importance is the run-off from agricultural fertilizer?

Dr. Prince: The run-off from agricultural lands, depending on the practice used, and depending on the topography, can be quite important in the contribution to pollution.

The nutrient elements, phosphorous and nitrogen are contributed in significant quantities from such sources; particularly where there are practices such as intensive feed lots and so on, there can be a very substantial pickup and the amounts of phosphorous, particularly that are necessary to create problems in the water, due to eutrophication, are so extremely small, it takes very little to create problems.

Phosphorous sensitivities are in the parts per billion, possibly in the range of from 25 to 50 parts per billion will cause an environmental condition whereby aquatic growth is stimulated, so that very few pounds of material are necessary to create a good deal of trouble.

Mr. Comeau: I have one more question. It might be a political question. I do not want to be sarcastic when I ask it either, but when I look at the Estimates and we are studying the Estimates on page 10, and I see "Office of the Assistant Deputy Minister, \$52,000" and this was not in the 1967-68 Estimates.

• 2130

I ask this question because there has been a lot of talk recently about the Department increasing its staff, and so forth. I am wondering why is it necessary, if you can answer this. Is it because of the increase in the overall research going on in this field?

Dr. Harrison: Mr. Chairman, the money that is charged against the Assistant Deputy Minister's office or any other Assistant Deputy Minister's office is that required for the operation of the office, his own salary, the cost of publications that service him, his secretaries and that sort of thing. This is the cost of actually operating the Assistant Deputy Minister's office.

Mr. Comeau: Yes, but I wonder—I probably should ask this of the Minister. This increase was not necessary last year, this year it is—

Dr. Harrison: I should point out that this is the first year that office appears in these estimates.

Mr. Comeau: Why is it in this year? Is there more research going on in this field?

Dr. Harrison: The water sector only acquired its Assistant Deputy Minister—effective April 1, 1967.

Mr. Comeau: Yes, but again, is it because there is a greater need—is more study going on in this field?

Dr. Harrison: Yes, this Department was created, as was mentioned earlier, to consolidate the studies on water. Part of this consolidation was the appointment of a man given specific responsibility for this field.

Mr. Comeau: That is all, sir.

Mr. Gilbert: Mr. Chairman, I would like to ask Dr. Prince, has his department major responsibilities with regard to pollution problems. If so, has there been any reduction in the moneys allocated to the Department's work on pollution?

Dr. Prince: Mr. Chairman, I think it would be true to say, we do have major responsibilities in the field of water pollution,—certainly not the sole responsibility among federal departments. I would say that our funds, for this phase of our work, have grown somewhat between the two estimates. Again, the specific amounts, related to each of the divisions, are not available right now. If it would be desirable to have them, I am sure that we could produce the figures for you,—if this is required.

Mr. Gilbert: Well, Dr. Prince, I thought that Mr. Aiken indicated in his opening remarks, that there had been a substantial reduction in the water and co-ordination of renewable resources program, then last week Mr. Langlois directed a question through the Chairman to Dr. Prince, Dr. Prince attempted to answer the question by saying that there was a major reduction with regard to capital grants and more specifically with regard to the purchase of three ships. I think that may have been the substance of his answer. I am just wondering, in the total picture, has there been a reduction in the monies allocated to your Department, for work on pollution?

Mr. MacNeill: Mr. Chairman, if I could answer that—again very briefly. As was pointed out at the last sitting, there is an

over-all reduction shown of \$3.4 million between the two years on page 2, I believe, but also between the two years there has been a reduction of approximately \$11 million on two items, the Red River project and in ships. These are shown on page 10 as I indicated the other day. So there is a reduction of approximately \$11 million in two items but an over-all reduction of the sector as a whole of only \$3.4 million. This indicates that there has been an increase in other programs. Among those other programs in which there has been an increase we find pollution. How much of that increase has been allocated to pollution and how much to other purposes is not shown on the estimates.

• 2135

Mr. Gilbert: So that, Dr. Prince, you feel that your Department has not been restricted as regards your work on pollution?

Dr. Prince: Mr. Chairman, I think that we are receiving adequate support. I might say that this area is one in which we will have difficulties in recruitment, also in housing other functions until such times as permanent buildings are completed. I would say, however we are not suffering from a shortage of funds—to assimilate and utilize those funds as well as we can under the circumstances.

Mr. Gilbert: Dr. Prince, does the \$5,527,900 which refers to construction and acquisition refer to the Canada Center for Inland Waters at Burlington, what other major projects have you?

Dr. Prince: Mr. Chairman, the \$5,527,000 is not entirely for the Canada Center. The figure for that construction activity I believe is \$2.9 million of that estimate this year. The rest of it is concerned with the procurement of equipment of a diversified nature for scientific purposes, again, some of that equipment, I cannot say how much, is being devoted to pollution research.

Mr. Gilbert: With regard to that \$251,000 concerning grants, contributions and subsidies, what would be the major allocation of that money?

Mr. Hymmen: Mr. Chairman, are we on vote 40, 45, or 50?

Mr. Gilbert: Mr. Chairman, I am just going through the different sections that apply to Dr. Prince's jurisdiction of inland waters.

Dr. Prince: If it is in order to reply to the question on vote 50 on the \$251,000; this sum is made available to the Branch for support

of university research under the direction of the National Advisory Committee on Water Resources Research. It is, usually, allocated in moderately small amounts to many applicants from the university community. I would say, perhaps, the largest proportion of applications comes from workers in the field of water pollution. There is a very large demand for funds of this type, they far exceed the amount of the fund, because of the growing interest in the matter. We have allocated most of this fund already but will be giving further consideration to requests for grants shortly after the new year.

Mr. Gilbert: One final question, Mr. Chairman. If a constituent complains to me about the pollution problem in Lake Ontario, would I be right in saying, the primary responsibility is provincial. That, even though you have a research centre at Burlington, it is the responsibility of the Ontario Water Resources Commission to clear up that problem?

Mr. MacNeill: If the pollution concerned derives from municipal or industrial sources, shore-based sources, the answer is yes—indeed.

Mr. Gilbert: Thank you, Dr. Prince.

Mr. Serré: In regard to water pollution we know the federal government is taking action to correct areas where rivers and inland waters are already polluted.

I was wondering if there was any program, of preventive action, in regard to pollution of rivers or streams in areas of rising population? I would like to refer to the Northern Ontario region, which is becoming more and more populated. There is danger of pollution, that we did not face before. After representations to the Ontario Government, which does not seem to do much about it, I wonder if the federal department, or the federal government is in a position to take preventive action?

Mr. MacNeill: Well, Mr. Chairman, I am not familiar with the work or the continuing programs the Ontario Government, through the Ontario Water Resources Commission, might have with regard to pollution control in Northern Ontario waters. With regards to regulation the federal government would be concerned and could take preventive action if the river involved was a major fishery. This could be of concern to the Department of Fisheries, but otherwise it would be from the point of view of regulation again, princi-

pally, but not entirely, a provincial responsibility.

• 2140

Mr. Serré: Well, Mr. Chairman, if the provincial government does nothing about it, will the federal government be entitled to step in and take over or put on pressure of some kind?

Mr. Langlois: When it does that they will change the government.

Mr. Korchinski: I just wonder whether it might not be better to send all that money that we are voting and give the grant to the province and let them go ahead and see what they can do with it, rather than work on a problem that is obviously not our responsibility.

The Chairman: Well, gentlemen, I have no other questions before me at the moment so I would like to put the question to you at this time.

Mr. Gilbert: Mr. Chairman, I am going to direct my questions on the third phase on Policy and Planning to Dr. Tinney and it is rather late at this hour, and I would ask that Dr. Tinney come back next week. I would like to ask him about his Department of Policy and Planning.

The Chairman: Would you like to—

Mr. Orange: Where is this, Mr. Chairman?

The Chairman: Policy and Planning under Construction or Acquisition.

An hon. Member: Yes you are right, under each of the three items, Mr. Chairman.

Mr. Sulaiycky: I think we could, Mr. Chairman, direct only Dr. Tinney back for the sake of the limited time, next meeting.

The Chairman: Would it be satisfactory to the Committee if only Dr. Tinney came back for the next meeting on Tuesday morning?

Mr. Sulaiycky: It is obvious the Committee has had sufficient time with all but Dr. Tinney. He has not been questioned and if Mr. Gilbert wants to direct his questions only to Dr. Tinney, there is no need for the other—

The Chairman: I am informed that Dr. Tinney has an important engagement in Newfoundland on Tuesday and he will not be here. So we will either have to by pass him or hold it over for another meeting.

Mr. Gilbert: Probably he has an assistant who could make a statement.

The Chairman: I will put another question then. Would it be satisfactory to the Committee if only Dr. MacNeill came back for this particular item on Tuesday morning.

Mr. Marchand: Yes, very good.

Mr. Orange: Mr. Chairman, do we intend to spend all of Tuesday morning on just this one item or shall we proceed to others if it is satisfactory with the Committee?

The Chairman: We want to carry on with Vote 45 and 50 on Tuesday as well. After we finish with 40, 45 and 50 we want to go on with Votes 15, 20 and 25 next.

● 2145

Mr. Hymmen: Mr. Chairman, with reference to the request of Mr. Gilbert which I believe is in Vote 45, I wonder if the Committee would be agreeable to pass Vote 40?

Mr. Gilbert: We will pass it on Tuesday, Mr. Chairman.

The Chairman: There is no agreement to go ahead to pass Vote 40. You want to retain your question for Vote 40, Mr. Gilbert?

Mr. Gilbert: Yes, Mr. Chairman.

The Chairman: You would not consider passing it over to Vote 45 for Tuesday morning? Would you consider passing it over to Vote 45 for Tuesday morning, Mr. Gilbert?

Mr. Gilbert: What is the reason for pushing Vote 40, Mr. Chairman?

Mr. Langlois: To get us ahead.

The Chairman: Gentlemen, if I may have your attention. It appears that we have reached a stalemate at this stage so I would like to adjourn the meeting until 11.00 a.m.

Mr. Orange: On a point of order, Mr. Chairman. Are we going to continue with Vote 40 and 45 on Tuesday or are we going to ask some other vote if we complete this?

The Chairman: No.

Mr. Orange: I gather from what Mr. Gilbert has said that he has a series of questions, but I am sure they will not take the entire period.

The Chairman: No, we will finish Vote 40 on Tuesday and go on to Vote 45 and 50, and 15, 20 and 25.

The meeting is adjourned.

OFFICIAL REPORT OF MINUTES
OF
PROCEEDINGS AND EVIDENCE

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Translations under the direction of the Bureau for Translations, Secretary of State.

ALISTAIR FRASER,
The Clerk of the House.

HOUSE OF COMMONS
First Session—Twenty-eighth Parliament
1968

STANDING COMMITTEE
ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE
No. 6

TUESDAY, NOVEMBER 12, 1968

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources

WITNESSES:

From the Department of Energy, Mines and Resources: Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J. P. Drolet, Assistant Deputy Minister (Mineral Development); Mr. G. M. MacNabb, Assistant Deputy Minister (Energy Development); and Mr. R. B. Toombs, Energy Adviser (Oil and Gas).

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

⁵ Allmand	Grills	Moore (Bonavista-
Beaudoin	⁴ Guay (<i>St. Boniface</i>)	Trinity-Conception)
³ Chappell	Harding	Orange
Code	Howard (<i>Okanagan</i>	Ricard
Comeau	Boundary)	Ritchie
¹ Deakon	Marchand (<i>Kamloops-</i>	² Roy (<i>Timmins</i>)
Gilbert	Cariboo)	Sulatycky—(20).

(Quorum 11)

J. H. Bennett,
Clerk of the Committee.

¹ Mr. Deakon replaced Mr. Langlois on Friday, November 8, 1968.

² Mr. Roy (*Timmins*) replaced Mr. Danson on Friday, November 8, 1968.

³ Mr. Chappell replaced Mr. Serré on Friday, November 8, 1968.

⁴ Mr. Guay (*St. Boniface*) replaced Mr. Turner (*London East*) on Friday, November 8, 1968.

⁵ Mr. Allmand replaced Mr. Weatherhead on Friday, November 8, 1968.

ORDER OF REFERENCE

HOUSE OF COMMONS
FRIDAY, November 8, 1968.

Ordered,—That the names of Messrs. Deakon, Roy (*Timmins*), Chappell, Guay (*St. Boniface*) and Allmand be substituted for those of Messrs. Langlois, Danson, Serré, Turner (*London East*) and Weatherhead on the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER,
The Clerk of the House of Commons.

(Text)

MINUTES OF PROCEEDINGS

TUESDAY, November 12, 1968
(6)

The Standing Committee on National Resources and Public Works met this day at 11.07 a.m. The Chairman, Mr. Hopkins presided.

Members present: Messrs. Allmand, Beaudoin, Chappell, Comeau, Deakon, Gilbert, Guay (*St. Boniface*), Hopkins, Howard (*Okanagan Boundary*), Marchand (*Kamloops-Cariboo*), Orange, Ritchie, Roy (*Timmins*), Sulatycky—(14).

Also present: Mr. Clermont, M.P.

In attendance: From the Department of Energy, Mines and Resources:

Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J. P. Drolet, Assistant Deputy Minister (Mineral Development); Mr. G. M. MacNabb, Assistant Deputy Minister, (Energy Development); Mr. R. B. Toombs, Energy Adviser; and departmental officials.

The following items of the Revised Main Estimates (1968-69) of Energy, Mines and Resources, were called by the Chairman and unanimously approved:

Water and Coordination of Renewable
Resources Programs

Item 40—Administration, Operation and Maintenance	\$30,457,400
Item 45—Construction and Acquisition of Buildings, Works, Land and Equipment	\$11,202,000
Item 50—Contributions to the Provinces	\$ 5,889,300

The Chairman then called Item 15—Administration, Operation and Maintenance—Mines, Minerals, Energy and Geosciences.

Dr. Harrison, Messrs. J. P. Drolet, G. M. MacNabb and R. B. Toombs addressed the Committee and were questioned.

At 12.35 p.m. discussion continuing, the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, November 12, 1968

The Chairman: Gentlemen, I see a quorum.

Before we adjourned our last meeting a desire was expressed to complete Items 40, 45 and 50. If there are no further questions I would like to ask for passage of these three items.

Items 40, 45 and 50 agreed to.

I will call Item 15.

DEPARTMENT OF ENERGY, MINES AND RESOURCES MINES, MINERALS, ENERGY AND GEOSCIENCES

15 Administration, Operation and Maintenance including the administration of the Explosives Act, the purchase of air photography, the expenses of the Interdepartmental Committee on Air Surveys, the National Advisory Committee on Control Surveys and Mapping, the National Advisory Committee on Research in Geological Sciences, the National Advisory Committee on Research in Mining and Mineral Processing, the Canadian Permanent Committee on Geographical Names, the National Committee for Canada of the International Astronomical Union and authority to make recoverable advances not exceeding the amount of the share of the United States Government of the cost of binding annual reports and maintaining boundary range lights35,879,700.

Dr. Harrison, will you give a brief résumé of this item prior to my calling for its passage.

Dr. J. M. Harrison (Assistant Deputy Minister, Mines and Geosciences, Department of Energy, Mines and Resources): Thank you, Mr. Chairman. Vote 15, Vote 20 and Vote 25 refer to the section of the Department called "Mines, Minerals, Energy and Geosciences". Now the mines, minerals and geosciences part of this vote is in essence the old Department of Mines and Technical Surveys, the predecessor department to Energy, Mines and

Resources. Most of the organizations that are listed here have been in existence for a great many years—one of them at least longer than Confederation itself. The items in Vote 15 that are concerned with mineral development, mines and geosciences refer to these older aspects of the Department. Energy development is the new part of the Department, and one of the main reasons for its formation is to provide the Government of Canada with co-ordinated information on energy sources and their development in the national economy. This comes under the direction of the Assistant Deputy Minister for Energy Development, Mr. MacNabb, who is seated on my right.

• 1110

The mineral development which is the next part of Item 15, and so on, is under the Assistant Deputy Minister of Mineral Development, Mr. Drolet, who is on Mr. MacNabb's right.

Before dealing in any matter having to do with the mines and geosciences side it might be wise, Mr. Chairman, if we took these in the order in which they are given in case anybody wishes to ask any questions of Mr. MacNabb, followed by Mr. Drolet and then finally by myself, to handle the mines and geosciences side. This would be the quickest way of getting through it. This is on page 5 and it deals with energy development. There are three assistant deputy ministers involved in these sectors. The energy development, Mr. MacNabb; the mineral development, Mr. Drolet; mines and geosciences, myself. I would suggest that we ask Mr. MacNabb and Mr. Drolet in succession to say what they wish about their own particular sectors and then to invite questions immediately following the individual presentations.

The Chairman: Mr. MacNabb?

Mr. G. M. MacNabb (Assistant Deputy Minister, Energy Development, Department of Energy, Mines and Resources): Thank you, Mr. Chairman. As Dr. Harrison has pointed out, the energy responsibility of the Department is quite new. There was no staff within

the Department to form a nucleus of the energy sector, so the sector has had to be built up from scratch.

We have responsibility in all forms of energy. One of the reasons for putting the energy responsibilities into the Department of Energy, Mines and Resources was so that there could be a nucleus of people built up with expertise in electrical energy, oil and gas, uranium and coal so that proposals going forward to government relating to one aspect of energy could go forward with the whole scope presented to Cabinet. The implications of a development program in electrical energy, for example, could also set out the effects on the coal industry, the competition of nuclear energy.

The second major reason for setting up the sector was the obvious need for a co-ordinating body for energy. At the present time it is a very fascinating field of endeavour because in all forms of energy there are changes being made. In the electrical energy field Canada, which has been blessed with hydroelectric power, is now proceeding more and more into thermoelectric developments. Until recently nearly all of our development was in hydro. At the present time in Canada the ratio is about 80 per cent hydro and about 20 per cent thermo. This is changing, however, and more thermo is being installed every year. The percentage of thermo added each year is now greater than hydro. So, we are undergoing a change from a hydro base and at the same time we have competition between conventional thermoelectric power fired with coal—or in some cases, oil—and our nuclear program.

• 1115

On the oil and gas side at the present time we have the far northern interest, which has been greatly increased by the oil finds off the northern slope of Alaska and there are very considerable exploration programs going forward in our offshore areas. The uranium industry is coming out of the doldrums and therefore we must have a continuous review of that industry to make certain the best use of it is made for the Canadian people.

Finally, the coal problems which have beset us for years, particularly on the Eastern coal, and the subvention programs that we have become involved in are being resolved. The Cape Breton Development Corporation is now looking after the Cape Breton industry and an agreement has been reached with New Brunswick for the rationalization of the New

Brunswick coal industry. That is the Eastern picture. On the Western side we have great prospects for a very profitable coal industry without the need for federal subvention, which will mean relying largely on the export market.

So, there are changes taking place in all energy areas, and there is need for a co-ordinating body because the problems which now come before us in the energy field are ones that cannot be looked at in their entirety by any one department or any one agency. They require all the expertise that is available within the federal government. It is the role of the energy sector to pull together the inter-departmental task forces in order to give a comprehensive look at all the energy problems that come before us.

That is a general introduction, Mr. Chairman, to our functions. I can very briefly touch on some of the areas of activity that we are involved in at the present time. On the electrical energy side we are doing a considerable amount of work in the Maritimes. We are involved in a joint study program with the Newfoundland and Labrador Power Commission. This is a study of alternative means of meeting the power demands of the island of Newfoundland in the future. The alternatives to this would be the development of thermoelectric power on the island or the development and transmission of power from the lower Churchill River. The latter would involve the construction of a submarine cable between Labrador and Newfoundland. At the present time we are also involved in a review of the Atlantic Provinces Power Development Act to see whether that Act is in fact accomplishing what it was set out to do and whether or not there is a better means of achieving the objectives of the Act.

The sector is also involved in the Atlantic tidal power study, which I mentioned briefly last Thursday. Our interest is primarily in the marketing end of this study. We have been investigating the markets that might be available for the large amount of power that could be developed from the tides, and we are looking at markets in the United States, Quebec, Ontario and the Maritimes.

We have a continuing interest in the Nelson River development the agreement under which Atomic Energy of Canada Ltd. is building a high voltage direct current transmission line from the Kettle Rapids project on the lower Nelson. This agreement calls for the establishment of an advisory committee to keep governments informed of the progress of

the work, as well as future possibilities for the sale of some of this power either by export to the United States or to adjoining provinces.

I have a personal continuing interest in the Columbia River development, as the Canadian chairman of the Permanent Engineering Board which was established by the treaty and with the responsibilities of ensuring that the objectives of that treaty are met. These are just an indication of the involvements on the electrical side. I might also mention the Trans-Canada network study which has been completed and should be tabled in the near future.

• 1120

We are also looking at research possibilities. The development of our transmission systems almost dictate now that we enter into more direct current transmission facilities. In some cases this is a new field of endeavour and we are investigating what research possibilities might be productive for Canadian industry.

As to our responsibilities in oil and gas, the energy sector has inherited the resource administration division. In the estimates you are looking at today this division and their funds are set out under mineral development. However, next year's estimates will show the responsibility of offshore administration under the energy sector. So, there is a continuing responsibility on the administration of that resource.

We also look at other federal endeavours in the oil and gas industry such as the Point Tupper refinery, Cape Breton Island and the Panarctic exploration endeavours in the North. I can say little about the uranium industry except to say that we are undertaking a continuing review of our policy towards uranium and how it fits in with the new look to that industry and the great demands that are going to be made on our uranium resources in the future. Similarly, on coal, we are co-operating with the Cape Breton Development Corporation and the Dominion Coal Board in the resolution of the problems in the eastern coal market, as well as on the incentives to the western coal industry to allow them to enter into the long-term contracts with Japan.

Thank you, Mr. Chairman.

The Chairman: Thank you, Mr. MacNabb.

Mr. Drolet, on mineral development.

Mr. J.-P. Drolet (Assistant Deputy Minister, Department of Energy, Mines and Resources): Thank you, Mr. Chairman.

As you may gather from the title given to my sector, Mineral Development, this group deals with the mineral industry of Canada. You will understand that we are not dealing with the rights to prospect, or to develop, a particular ore deposit located within the limits of a province, because minerals belong to the provinces in which they are located.

The Mineral Development group is formed mainly by a group of specialists—a group of what I would call mineral economists—whose main function is to advise the Deputy Minister and, indirectly, the Minister of this Department on mineral policy affecting our economy in Canada.

This group of experts collects all the information and records and compiles this information for the use of our Department and several other departments of the Government of Canada, Crown corporations, foreign industry and private industry, and so on. We carry out economic studies on the exploration and development of production and also on the utilization of the mineral resources of Canada.

In order to be kept informed of what is going on, not only in Canada but in other parts of the world—because the mineral industry is the second most important of all sectors of exports—we also have to know exactly what is going on in other countries so as to be able to compete; therefore, a great part of our work consists of field investigations.

The group is also responsible for the administration of the Emergency Gold Mining Assistance Act.

We advise the Department of National Revenue on the administration of the sections that concern the Income Tax Act and those of its regulations that are applicable to the mineral industry, such as the three-year exemption. We are the advisors to the Department of National Revenue on these matters.

We are also represented on several international and inter-departmental committees, and are called upon at all times to advise the Departments of External Affairs and Trade and Commerce on the policies of Canada in rural development.

• 1125

The group also publishes a lot of material in the form of reports of all kinds, and I have brought here with me to show you one of the main reports that we make every year on the

mineral industry of Canada. This is a resume of all the activities on each mineral substance.

As you all know, the mineral industry is one of the most important that we have in our country, accounting for about seven per cent of the gross national product and with an annual value of production of \$4.5 billion. It also accounts for one-third of our exports, and gives employment to about 130 to 140 thousand people in this country, which is about twelve per cent of the working force. We are probably railway transportation's best customers. All the railways that have been built since World War II have been built because of mining operations. I could give you many many of the characteristics of the industry, and this particular group deals with all these matters.

There is another special group in Mineral Development which deals with explosives for the Federal government under what is called the Explosives Act, which we administer. This Act regulates the manufacture, storage and sale of explosives and we also authorize their importation as well as their transportation by road across Canada.

From what I have said you will understand immediately that we have to do a great deal of inspection all across Canada on every mining road and mining camp.

We also supervise the manufacturing of explosives for safety purposes. We do that in co-operation with many of the provinces, but explosives manufactured in a plant in Montreal may be delivered somewhere in Manitoba so it is not only a provincial responsibility. We are involved in this across the whole country.

We also have a small unit as a regional office in the City of Quebec. This office handles much of the technical information that is available from the Department of Energy, Mines and Resources to this, the eastern part, of Canada which covers principally the area from Montreal to the Gaspé Peninsula in the Province of Quebec. It is more than an information centre. At the head of that unit we have a professional engineer who is a metallurgist. He acts as a contact on matters of maps and charts, and so on between the provincial government and the universities and federal establishments such as Carde in Valcartier on the work that we are doing on research in physical metallurgy at the Mines Branch.

That, in a few words, is what the Mineral Development sector is concerned with.

The Chairman: Thank you, Mr. Drolet. Dr. Harrison, Mines and Geosciences.

Dr. J. M. Harrison: Thank you, Mr. Chairman.

On pages 5 and 6 of the paper that you were given on the first day we met you will see the general summary of the total expenditures envisaged for the mines, minerals, energy and geosciences components, and I am referring only to the mines and geosciences listed under that heading as item No. 3 in vote 15, item No. 2 in vote 20 and item No. 3 in vote No. 25.

As I mentioned, this particular group really forms the backbone of the old Department of Mines and Technical Surveys, and the work of these four branches is concerned which surveys and mapping, geological survey of Canada, Mines Branch and the Observatory Branch. In addition, there is an independent co-ordinating unit called the Polar Continental Shelf Project which, to a large degree, uses the expertise and facilities available for the other branches.

The summary of their activities is given on page 8, starting with the first complete paragraph and carrying through page 9.

I will not elaborate on these, but in summary perhaps I might explain just a little bit more directly what some of these mean in terms of the Department and the Government of Canada.

• 1130

Surveys and Mapping Branch provides the data fundamental to the work of all the other branches in the Department, the basic topographic land map of Canada. The Geodetic Survey provides the primary control; it locates the places in Canada with such exactitude that all other surveys in Canada originate from those points. It also carries out what is called a secondary type of mapping, the topographical survey, which provides the base maps that I am sure many of you have used in hunting and expeditions or travelling across Canada one way or another. It also is responsible for preparing the aeronautical charts that are used by all air carriers in Canada and, of course, anybody who flies internationally in Canada.

It acts as the Canadian arm for the international boundary survey with the United States. It manages legal surveys for the federal government including such things as Indian reserves, Crown lands, parks and so on, and compiles and publishes an extremely

large variety of maps from very large scales to very small scales.

The Geological Survey through its activities is one of the first and primary users of these topographical maps as they are used as the base on which the fundamental geological survey of Canada is undertaken. The principal job demanded here is to provide the basic geological framework for the country the laboratory backup necessary to explain a phenomenon that we see in the field and the whole design to provide basic information to the exploration companies in order to explore for and find the mineral resources of Canada. Mr. Drolet has already mentioned the importance of these resources to the Canadian economy.

The mining and metallurgical investigations conducted at the Mines Branch are applied science in the broadest sense in that they provide basic information on studies that will lead to the more economical winning of the mineral resources of the earth. In addition to providing a certain amount of support on request for specific investigations, the basic concern of the Mines Branch is to provide general information that can be utilized by wide areas of the mineral industry. Emphasis is being given to the development of techniques that will allow us to get better recovery from the presently mined resources and to enable us to extract profitably useful materials from bodies that are at present too low-grade to mine economically.

In the Observatories Branch we conduct research in astronomy and geophysics. The geophysics research is fundamental to the study of the earth itself and is closely related to the work of the Geological Survey of Canada in the utilization of the results. In addition it carries out fundamental studies such as participating in the international study of nuclear explosions, earthquake risks and other such more practical affairs. It also provides data for example on the magnetic field of Canada—the magnetic field of the world including Canada—so that navigational procedures can be better worked out. It also carries out research in astronomy which includes both optical and radio astronomy. This activity by and large is carried out in the West although there has been in the past much activity of this nature in the Ottawa region. It also provides a fundamental time service for the whole of Canada.

• 1135

And finally the Polar Continental Shelf project is responsible for co-ordinating depart-

mental activities in the Polar Region of Canada and in the Continental Shelf adjacent thereto. This carries out a wide variety of activities to provide information that is fundamental to the utilization of the potential resources of the Arctic and may provide a host of activities that will enable us to find these things more economically.

I think that, sir, provides a summary of the Mines and Geosciences part of this.

The Chairman: Thank you, Dr. Harrison. Before commenting on Item No. 15, I have been informed since the meeting started that Mr. MacNeill, who has been with us for the last couple of meetings, had a very severe tragedy in his family over the weekend in the loss of his 14-year-old son and I believe the funeral is this afternoon at 2.00 p.m.; so we will want to let the gentlemen who are with us this morning go early because I am sure that they will want to be in attendance. And at the same time I know that all members of the Committee will join with me in extending our deep and sincere sympathy to Mr. MacNeill at this time.

Dr. Harrison: Thank you, Mr. Chairman. I will pass on your expression to Mr. MacNeill when I see him.

The Chairman: Thank you very much.

Now, gentlemen, would you address any questions to Mr. MacNabb because he has his backup people with him here today. We have Mr. K. G. Richardson, from the electrical end, and Mr. R. B. Toombs, oil and gas.

Mr. Deakon: Mr. Chairman, I would like to pose a question to Mr. MacNabb with reference to what he has mentioned regarding the various responsibilities of his particular branch of the Department. I would like to know whether he can advise the Committee, in view of the fact of progress in oil, gas, water and thermo-nuclear energy developments, whether he can foresee in the not-too-distant future a phasing off of the coal energy, which would involve social problems in many parts of this country.

Mr. MacNabb: Mr. Chairman, I think the simple answer to that is yes. The burning of coal as a fuel will be reduced over the years to come. There are a number of reasons for this, the principal one being that the nuclear plants will become more and more competitive with the coal-fired thermo-electric plants.

The coal that can compete at the present time without subventions in the thermo-elec-

tric generation comes from strip mining operations. I cannot at this time think of any underground operation in Canada that can produce coal for the production of electrical energy at a rate which is competitive with either oil imports or what we would expect our nuclear plants to produce electrical energy for in the future. But this is coal mined for one particular end use. There are many other end uses. I think there is quite a future for coal in the chemical industry for one thing, and of course our western industry which is being developed now is being developed for metallurgical coal and not for the development of a fuel for thermo-electric power generation.

Mr. Deakon: Thank you, Mr. Chairman.

Mr. Gilbert: Thank you, Mr. Chairman. I am directing my first question to Mr. MacNabb. I notice that yours is a new department, Mr. MacNabb, and that your estimate is \$294,000. Is that right?

Mr. MacNabb: That is right.

Mr. Gilbert: Then you set forth quite a list of activities for which your Department is responsible. How many of a staff would you have to take care of all those programs?

• 1140

Mr. MacNabb: Mr. Chairman, the Committee is looking at my staff right now, other than our secretarial support and other than the Resource Administration Division which I have recently inherited and which deals with the offshore oil and gas matters. As you can see from page 5 and the man-years placed there opposite the \$294,000, support team, we have freedom to have a staff of 10 in this current fiscal year and I expect by the end of the year we will have the full complement of 10. Our list of duties and responsibilities does seem to outweigh our staff but I think it should be remembered that one of our main responsibilities is co-ordination; in other words, we do not necessarily do the job ourselves, but rather we see that it is done within the federal government and we try to co-ordinate the activities of other agencies and departments that have interest in the energy fields.

Mr. Gilbert: Is your department responsible for developing the national oil policy?

Mr. MacNabb: Mr. Chairman, that responsibility again is a shared responsibility because there are many departments interest-

ed in this—our own, the Department of Trade and Commerce and the National Energy Board, of course.

Mr. Gilbert: Did you participate in that recent discussion whereby there is a cutback on the national oil policy?

Mr. MacNabb: Mr. Chairman, questions related to the national oil policy, as I believe this is, concerning oil exports I believe should be asked of the National Energy Board people who are responsible for the administration of our export program.

Mr. Gilbert: For what would you be responsible, Mr. MacNabb?

Mr. MacNabb: We have an input, Mr. Chairman, in a review of how the oil policy is operating; we have an input into investigations of our tax structure, our incentive structure for the industry; for particular federal government participation in projects such as the Point Tupper refinery and, as I mentioned before, in the pan-Arctic exploration activity.

Mr. Gilbert: I think I heard you say that you participated with the Department of National Revenue with regard to tax allowances. Oh, it was Mr. Drolet, was it? I am sorry. I wonder if you would give us a little more fill-in on the Roberts Bank development? Are you participating in that development, Mr. MacNabb.

Mr. MacNabb: Mr. Chairman, this is largely a responsibility, as I understand it, of the Department of Transport in relation to the movement and loading of coal. Our interest in the energy function is not tied directly to the Roberts Bank loading facilities. As I mentioned, this is a use of coal largely for a metallurgical purpose, not for the development of energy either here in Canada or abroad.

Mr. Gilbert: I notice that you said you are Chairman of the committee with regard to the carrying out of the Columbia River Treaty. I wonder if you would just give us a short summary of your activities there? Are you satisfied that the Treaty is being carried out?

Mr. MacNabb: The answer to that, Mr. Chairman, is yes. I would be quite pleased to give a brief summary of where matters now stand. The Treaty, as you know, was ratified in September, 1964 and the protocol with it. Under the protocol the first of the three Canadian projects was to be completed in

April of 1968. This was the Duncan project on a tributary of the Kootenay River. That project was completed and put into operation on July 31, 1967, nine months ahead of the schedule called for by the protocol.

• 1145

The second project, the one at the Arrow Lakes, was to be placed in operation in April of next year, 1969, and it was declared fully operational by the British Columbia Hydro and Power authority on October 10 of this year, so we now have two of the three projects completed and in operation in advance of their scheduled dates.

The third project to be developed in Canada, and by far the largest—the Mica project—will be situated near the Big Bend of the Columbia River and is scheduled for operation by April 1, 1973. The status of development at that site is that the river has been diverted by cofferdams and the river bed has been excavated and the placement of fill for the dam itself has been started.

Canada, as a result of the completion of the Arrow and Duncan dams, has received the required flood control payments by the United States, \$12.1 million, I believe Mr. Chairman, in the case of the Duncan dam, and \$52 million for the Arrow Lakes project. I think those figures are correct. We have, of course, already received payment for the Canadian share of the downstream power benefits. This payment was received on the date of ratification in 1964.

Mr. Gilbert: Thank you, Mr. Chairman.

The Chairman: Mr. Comeau?

Mr. Comeau: You mentioned, Mr. MacNabb, that you were interested in marketing, dealing with all aspects of marketing. What about the coal markets? I am talking especially of the Nova Scotia coal in Cape Breton. Do you foresee an increase or do you think there is a future for this industry?

Mr. MacNabb: I believe there is a future, Mr. Chairman, for the industry in Cape Breton Island. I do not believe it will be for the burning as a fuel in the development of thermoelectric energy because I do not believe it will be able to compete with offshore oil or our future nuclear plants when the electrical load in the Maritimes becomes large enough to sustain a nuclear plant.

However, I believe people are hopeful that there will be a future, for example, in the

steel plant at Sydney. Through a better selection of coal, an analysis of coal, I believe they are hoping to build up a market right on the Island which certainly would make sense.

Mr. Comeau: You mentioned that this could apply to the chemical industry. Would you elaborate on that?

Mr. MacNabb: I think Mr. Toombs, if I may turn to him, may be able to give you better information on that.

Mr. R. B. Toombs (Senior Oil and Gas Adviser, Energy Development Sector, Department of Energy, Mines and Resources): There are two principal markets, one being the thermo power market which possibly will decline, and then there is the metallurgical market. One could hope that between these two markets coal production from the Sydney mines could be stabilized at between two and three million tons a year, which would mean something of a cutback from the present level but still quite a solid core of production from those mines.

Mr. Comeau: Are you concerned, Mr. MacNabb, with the heavy water development?

Mr. MacNabb: No, not in the detail that I am sure you would be interested in, Mr. Chairman. Our interest is more in the role that the nuclear energy itself will play in the energy picture in Canada in the future and its relation to the other energy forms, rather than to the components of the nuclear plant.

• 1150

Mr. Comeau: I have one other question. You mentioned the Point Tupper refinery. What is your involvement in this again?

Mr. MacNabb: This is strictly an advisory function to the government. When we receive requests for assistance from the federal government we co-operate with agencies such as ADA in reviewing the application looking, in this case, at the refinery, its possible markets in the American area, and whether or not federal assistance is warranted.

Mr. Comeau: That is all, Mr. Chairman.

The Chairman: Mr. Roy?

Mr. Roy (Timmins): Is any Department? Mr. MacNabb, concerned with weather modification?

Mr. MacNabb: Certainly not the energy sector, Mr. Chairman.

Mr. Roy (Timmins): Is any Department?

Dr. Harrison: It is not a concern of this Department. It is a concern of the Department of Transport, the meteorology branch, and possibly the Department of Agriculture.

Mr. Roy (Timmins): Is there any activity? Do you know of any activity in these departments regarding weather modification?

Dr. Harrison: I do not know what activity there is, except that I know in the Department of Transport they are looking into these possibilities to keep abreast of what is going on in the field. Whether they have an actual program, I could not say.

Mr. Roy (Timmins): Thank you.

The Chairman: Mr. Ritchie?

Mr. Ritchie: Under thermal power—that includes coal, oil, gas and nuclear, does it?

Mr. MacNabb: And nuclear, yes.

Mr. Ritchie: There has been some discussion about whether or not we should continue to develop hydro-electric, as it involves changing topography, with the coming of nuclear power and other thermal power. What do you think of this discussion?

Mr. MacNabb: Mr. Chairman, these two forms of generation are not necessarily in competition. Rather than being competitive they complement one another. Both conventional thermo-electric power and nuclear plants are best suited to provide a continuing load, in other words to operate at full capacity as many hours as possible. This is the maximum efficient use of the project.

Hydro on the other hand can be developed with sufficient numbers of generators to provide the power if necessary for the peaks of the load. In other words it is a simple matter of shutting gates and taking generators on and off lines. This can be done very rapidly with a hydro plant. This cannot be done rapidly in a thermo-electric plant, either nuclear or conventional.

So really if you look to the future, the role of hydro, which in the past has met all of our power requirements at one time, will change and it will become predominantly one that will produce a peaking power, while the nuclear and conventional thermo-electric plants will provide the power to meet the base of the load.

An indication of this change, I suppose, the one that is close at hand is the development of hydro sites in the Madawaska River near Arnprior and Renfrew. Ontario Hydro, while they are involved in a very large-scale nuclear program as well as conventional coal-fired plants, have seen fit to build new dams on the Madawaska River and to add generators at some of the old dams. This is being done for this purpose of providing a peaking source of power. It might operate for as little as one hour a day, but it is still a form of generation that is needed.

So in answer to that, I do see a role for hydro and it is a very significant role. The difficulty is that most of our new and enlarged hydro-electro-electric sites are in remote areas now. We think of the Yukon River as an example. If that power is to be used in the southern markets we must build large and expensive transmission lines to get the power to the market. We cannot, unless, we have very unique circumstances, economically support a large expensive transmission line and use it for only about two hours a day. So these remote sites may have to be developed as a base form of generation. Therefore, they are competing with nuclear thermo-electric plants located at the load. So in this case we do have a competition, but in many of the other cases it is a complementary source of generation rather than a competitive one.

• 1155

Mr. Ritchie: At the Kettle River project, by the time power for export to the U.S.A. reaches the border, we have lost half the power, and by the time it gets to St. Paul we have lost half the remainder, so we end up with one quarter of the power that started out from Kettle Rapids. What is the future in this field? I understand the Russians are active in this field. Can we export power? Has the carrying of power over long distances improved? or are we doing anything in that field?

Mr. MacNabb: Mr. Chairman, I am not aware of the statistics that have been mentioned.

Mr. Ritchie: They may be wrong.

Mr. MacNabb: You would not have losses of that magnitude. The losses of transmitting power from Kettle Rapids to the United States market might be 10 per cent. The power from Kettle Rapids is being transmitted to Winnipeg by direct current lines. The

very high voltage lines and the transmission by direct current is more economical than the alternating current transmission lines we are accustomed to. So there has been an improvement made there.

The expense occurs not in the actual transmission itself, but from the conversion from alternating current to direct current at the point of generation and then back to alternating current at the point of distribution and use. These are very expensive facilities and there is work under way now in Sweden and other parts of the world to build better converter stations. Hopefully there will be a breakthrough in this in the near future, and we will have achieved the efficiencies that you have mentioned, sir, you feel would be warranted. I think there is an opportunity and a good possibility of reducing transmission losses and costs.

Mr. Ritchie: Those are better statistics than I am led to believe. One last question. Is the disposal of nuclear wastes in power plants the problem that at one time it was considered it might be?

Mr. MacNabb: I am not aware of any problem existing right at the present time. Certainly this is one that we cannot put under the carpet and forget about, because as we develop more and more nuclear plants there are going to be greater quantities of end products. I am not, if I may say so, in the pollution business, but in studying alternative forms of generation, certainly this is one of the problems associated with the nuclear plant that we must give some weight to.

Another problem that we have to give some consideration to is that cooling waters used by a nuclear plant receive a greater quantity of heat in their cooling actions than they do in a conventional thermo-electric plant. So we must be aware also of the thermal pollution, if you want to use that term. I am not aware of any immediate problems on the disposal of the waste materials themselves. I think this is a question on which you might be enlightened by Atomic Energy of Canada Limited when they appear before you.

The Chairman: Mr. Marchand?

Mr. Marchand (Kamloops-Cariboo): Most of my questions have been answered, Mr. Chairman. I will wait.

The Chairman: Mr. Sulatycky?

Mr. Sulatycky: Mr. Chairman, perhaps one of the witnesses could tell me what the relationship of this Department is to the Northern Canada Power Commission in the area where the federal government has sole jurisdiction.

Mr. MacNabb: Mr. Chairman, the Northern Canada Power Commission is, of course, the operating agency in the Territories for the development of power. Our involvement with Northern Canada Power Commission would be only on river systems in the North that we may be investigating for possible new developments for either use in the Territories, or transmission to southern markets. We would not be involved in any way in the actual construction of plants by Northern Canada Power Commission or in the operations of their systems.

Mr. Sulatycky: Mr. Chairman, could I be advised what agencies are involved in research into the non-conventional—at present non-conventional—uses of coal?

● 1200

Dr. Harrison: We have in the Mines Branch of the mines and geosciences group the Fuels Research Centre, and this is where the federal government's research any method on the utilization of coal—is carried out and these new facilities on the Corkstown Road will contain new facilities for carrying out experimental work as part of the heating operations of the Corkstown Road plant.

Mr. Sulatycky: Is this study being conducted into all types of coal including the metallurgical coal from the West as well as the coal from Cape Breton?

Dr. Harrison: Yes, sir.

Mr. Sulatycky: What are the market prospects for the sale of metallurgical coal to markets other than Japanese?

Mr. MacNabb: Mr. Chairman, my involvement with this is indirect but I do believe there is a good prospect for markets for Western coal in the western part of the United States. This has not been developed yet. One of the problems is transportation.

Mr. Sulatycky: Is your Department involved in any manner in trying to arrange for a more direct method of transportation to the western states from the coal areas of the Rockies?

Mr. MacNabb: Not as yet, Mr. Chairman.

Mr. Sulatycky: Do you anticipate that in the future there will be some more economical method of transportation available for this coal? Is the government actively involved in the problem of transportation?

Mr. MacNabb: Mr. Chairman, the government is actively supporting the Western coal industries through our subvention programs which will terminate in 1972 and through the work done by the Fuels Research people in the Department. Now, the key to the movement of Western coal economically to overseas markets is a unit train development, and when the production of coal reaches a certain level in the Canmore, Coleman, and Kaiser fields so that they can support a unit train this results in a very significant reduction in the transportation costs. If you are to move coal to the Western United States markets, I think the same procedure would have to be developed.

Mr. Sulatycky: What about sulphur? In the last few years the exports of elemental sulphur has been increasing at a very great rate. Are there good prospects for similar rates of increase over the next few years?

Mr. Toombs: Yes, I would say there are good prospects. There is a good potential for increased production of sulphur. There is good scope for decreasing the cost of transportation of sulphur from the gas fields of Alberta to the West Coast through cheaper rail transportation and through two types of pipeline research, one involving the movement of sulphur in a bath of crude oil and the other moving sulphur in capsules in a crude oil stream.

The competitive forces associated with each of those methods should drive down the unit cost of transportation from Alberta to Vancouver quite considerably, I would think.

Mr. Sulatycky: Is your Department involved in the research into the uses of the pipelines for this purpose?

Mr. Toombs: The main pipeline research going on at the moment is in two areas; one is by one or two of the oil companies and the other is by the Research Council of Alberta who are using funds supplied by industry, the Alberta government and the federal government through the Department of Industry.

Mr. Sulatycky: Those are all the questions I have, Chairman.

• 1205

The Chairman: Mr. Deakon?

Mr. Deakon: Mr. Chairman, the questions I wish to pose to Mr. MacNabb and his learned friends pertain to the actual breakdown of the estimates. Referring to page 74, the Revised Estimates for the fiscal year ending March, 1969, and in view of the fact that this is a new department, the estimates show salaries totalling \$198,700 assuming there are 14 employees. If I understand correctly, Mr. MacNabb stated initially that they will have reached their full complement of 10 employees. Where are the other four to be fitted in?

Also, I notice further on that you have a special breakdown for Professional and Special Services in the sum of \$28,000. How can this be reconciled?

Mr. MacNabb: Mr. Chairman, first of all the reduction from our projected 14 positions to 10 is a result of the staff freeze, and therefore we will automatically have some reserve in our salary fund. However, what reserve would be there along with the \$28,000 that we have under Professional and Special Services will be used in the co-operative study that I mentioned with the Newfoundland and Labrador Power Commission, a study of alternative power supplies to the island of Newfoundland.

We have entered into a co-operative study and the hiring of consultants and we are picking up one-half of the cost of the study. This will use all of the \$28,000 we had available for that specific purpose and will eat well into any surplus we had under the salaries item.

Mr. Deakon: Mr. MacNabb, how did you reach the figure of \$28,000 on this project?

Mr. MacNabb: The Professional and Special Services is a very difficult one to analyse in the future because these studies, such as the one I mentioned with Newfoundland, are ones that you cannot see many months in advance, and this was really a token item for special services with the understanding that we might have difficulty, being a new sector, in the amount of paper work involved in recruiting our complement of what we hope will be 14 people.

If we were not able to recruit that many, we would have to rely more on consultant services, so really the items you have mentioned, the salaries and the Professional and

Special Services items, can be looked at together, because what we cannot service ourselves through our own staff we would have to turn to consultants for assistance.

Mr. Deakon: Mr. Chairman, I also notice that you have an item here for Office Stationery, Supplies and Equipment. Does that include surveying equipment which may be necessary and other surveying supplies such as field supplies of any kind?

Mr. MacNabb: No, Mr. Chairman, not for the energy sector. This relates almost entirely to furnishings for offices.

Mr. Deakon: Will you please tell me if you can, Mr. MacNabb, whether supplies such as survey equipment, and so on, are in a pool for all the various branches of this Department, or does each branch of the Department estimate its own requirements for this particular equipment?

Dr. Harrison: Mr. Chairman, the Department operates a central equipment stores depot but what is referred to here, generally speaking, is the normal type of office equipment—typewriters, dictating machines and all this sort of thing—required to operate an office.

Mr. Deakon: I have a last question and I may be a little biased here. I was wondering whether my learned friend could tell me whether you feel the public is receiving its money's worth in the services that are being provided by the Department.

Dr. Harrison: Do you mean for the Department as a whole?

Mr. Deakon: No, just this Branch.

Mr. MacNabb: For the energy sector? My answer to that, Mr. Chairman, is that I would certainly hope so. I feel there is. As I mentioned, the problems we in the energy sector are facing and will be facing in the whole energy economy of Canada, require as much input as possible from all interested departments and if we, in our co-ordinating role, can bring that about I think the people of Canada will be well served.

The Chairman: Mr. Howard?

Mr. Howard (Okanagan Boundary): Mr. Chairman, I have a question for Mr. MacNabb regarding atomic power developments. I understand that we, in Canada, have spent several hundred millions of dollars in the development of atomic power and research in

this field. I also understand that we still are not anywhere near competitive as to cost with regard to atomic power and electric and hydro power.

• 1210

I am wondering whether we are getting our money's worth out of this kind of power research. Is it possible that we could get the advantages of the research that is being done by buying it from some other country that is doing the same thing? Are we assured that the money that we have spent so far is going to be a worthwhile expenditure? Are we beyond the basic research stage? Or, how soon in the future would you anticipate that we are going to begin to get some kind of financial return from the atomic power developments that we have been engaged in?

Mr. MacNabb: I believe any detailed response to questions like this might better come from Atomic Energy of Canada Limited, but I would like to point out that I am not satisfied that we are not near a competitive cost with other types of nuclear plants. If you look at the experience of the nuclear plants in the United States I believe you will see that they are undergoing their teething problems, as is our Canadian project. These must be expected in any new form of generation. For example, we are experiencing difficulties with the new high temperature, high pressure and high speed conventional thermoelectric plants. It is not just the nuclear component of a new nuclear electric station that has teething problems. We are getting into such a magnitude of sizes, and even the conventional side of it, the generator, is giving us teething problems. So, I am not at all satisfied that—

Mr. Howard (Okanagan Boundary): But are we getting results in proportion to the vast amount of money that is being spent? This is not a minor item; it is a very large item.

Mr. MacNabb: It is very difficult, Mr. Chairman, to answer at this time because this is still in the development stage. It is as if you were halfway through a research and development program and trying to project whether the end result will repay all of our investment dollars. I think it is too soon to tell.

The question you must also ask is what are the alternatives. If we do not have our own Canadian plant it means that we will be in the market for purchasing from other producers. This in itself raises many questions of being dependent on overseas supplies. Cer-

tainly the prospects for nuclear generation are very bright, particularly for the CANDU reactor. The problem with the CANDU reactor, perhaps, at this time of high interest rates is that it is relatively more capital intensive than a thermoelectric plant or some of the other types of nuclear plants. However, once developed the cost of energy from these reactors is very, very low. As I say, the question you have asked is a very difficult one to answer when we are still in a development phase.

Mr. Howard (Okanagan Boundary): How much longer do you say it would be before we are going to have atomic power at some economical price?

Mr. MacNabb: I think that question will be answered when the projects that are now under construction—the 500 megawatt projects—have had one or two years of operation and any initial working problems are sorted out. I think you would have a good indication then.

Mr. Howard (Okanagan Boundary): How many years is this going to take?

Mr. MacNabb: I am advised that this will be completed in the early seventies.

Mr. Howard (Okanagan Boundary): So the expenditure will have to go on at least until the early seventies before we will have any idea of whether it has been successful or not?

• 1215

Mr. MacNabb: The expenditure in the existing program, yes. This is not an industry where you sit back when you have completed one phase. There are always ways of improvement and these must be pursued, not only in the nuclear generation but in looking at what perhaps is over the horizon from nuclear plants. What other form of generation will be coming along. Therefore if you are to stay ahead of the rapidly increasing demands for energy you must always be involved in research work.

Mr. Howard (Okanagan Boundary): We are talking about, perhaps, something in excess of \$1 billion by the time we might have an answer to this question of whether or not it will work.

Mr. MacNabb: Mr. Chairman, on that point I must say that Atomic Energy of Canada would be much better equipped to give you projections of this sort than I am.

Mr. Harrison: Mr. Chairman, may I interject just to inform you that Atomic Energy of Canada recently presented a brief to the Senate Committee on Science Policy, and although I have seen the brief I must confess I cannot remember the figures but they have some charts in there which I think will answer some of the questions that Mr. Howard is asking.

Mr. Howard (Okanagan Boundary): Thank you. I did have a question for Dr. Harrison on the other section. Is that to be dealt with later?

The Chairman: There is one more person to ask questions of Mr. MacNabb and then I understand we can go ahead with questions of Mr. Drolet and Dr. Harrison on other items in these Votes.

Mr. Guay (St. Boniface): Mr. Chairman, I would like to ask Mr. MacNabb if he mentioned at the beginning that he was chairman of a board of some type.

Mr. MacNabb: Yes, Mr. Chairman. This is the Permanent Engineering Board on the Columbia River development.

Mr. Guay (St. Boniface): This has nothing to do with the federal government.

Mr. MacNabb: It does in a way, Mr. Chairman. The board is established by the treaty between Canada and the United States relating to the development of the Columbia River. It is an international board with two representatives from Canada and two from the United States. I am the chairman of the Canadian section and the Deputy Minister of Water Resources in British Columbia is the other Canadian member.

Mr. Guay (St. Boniface): The reason I asked, Mr. Chairman, is because of the definite statement you made—and this did concern me slightly—that the aims of that particular board be met. This was your ultimate motive. Could you be more specific about the aims of this board and your definite wish that these aims be met. You mentioned this very briefly, and possibly you could explain what you meant.

Mr. MacNabb: Yes, Mr. Chairman. The objectives of the board, really, are to ensure that the objectives of the treaty are met. In other words, we review what the undertakings of each of the governments are under the treaty and make every effort we can to ensure that those objectives are met in the

time provided by the treaty. For example, that the projects are constructed on time, that their operating capability is such that they can meet the releases called for by the treaty, that the calculation of benefits is carried out, that any power that is to be returned to Canada is in fact returned to Canada and that the power operating plans and flood control operating plans are agreed to by the operating entities of both countries and that those plans are in fact followed. Mr. Chairman, we provide a report annually to the governments of both Canada and the United States.

Mr. Guay (St. Boniface): Is there not a chance, Mr. MacNabb, that this would interfere with the position you are now in at the federal level?

Mr. MacNabb: No, I do not see that as being the case, Mr. Chairman. In a way it is rather strange that I am still in this position on this board. It is a bit removed from the energy field as such; it is more of a regulating function in water management. The reason for this is because of my involvement on the Columbia for many years and it has just moved with me for the time being. This is not to say that I will not be replaced by another member.

Mr. Guay (St. Boniface): Thank you very much.

• 1220

Mr. Gilbert: Mr. Chairman, I wonder if I could direct a couple of further questions to Mr. MacNabb?

The Chairman: Yes, Mr. Gilbert.

Mr. Gilbert: Mr. MacNabb, would you tell me about the feasibility of developing that Bay of Fundy tidal power and whose responsibility would it be? Who has the primary responsibility? Is it provincial or does it come under federal jurisdiction? Does it fit into offshore rights or not?

Mr. MacNabb: Mr. Chairman, I do hope that we can keep the offshore rights separate because we have enough problems without that. However, the primary responsibility here of course would rest with the two provinces concerned. Now one site is, I believe, entirely within New Brunswick, there are a number of sites entirely within Nova Scotia, and there are others shared by Nova Scotia and New

Brunswick. It is quite obvious that the magnitude of these projects, the problems of construction, the problems of marketing, the raising of the necessary capital, and the large amounts of power would involve the Federal Government. The agreement under which we are studying the tidal power, as I say, is a federal-provincial one, with the Federal Government paying two-thirds of the cost of this study and each of the provinces paying one-sixth—with two provinces combine, one-third.

I have mentioned the problems of marketing but I might just elaborate a bit. It is not just finding a market large enough to absorb the large quantities of power concerned but it would have to absorb this power in a relatively short period of years. This is a capital intensive development and nearly all of your investment would have to go in in the initial construction because the bay does have to be closed off completely. This means that you have 80 to 90 per cent of your capital tied up even before you are generating power. To amortize that investment you must sell as much power as soon as possible. So you are looking for a very large market.

There is the other problem, that the power from the tides is dictated by the lunar cycle—the movement of the tides being dictated predominantly by the movement of the moon. The use of our power is dictated by the solar cycle. In other words, we demand a certain amount of power at high noon. However, as the moon may not be in the right location to produce the maximum tide we do have a very complicated problem in this connection. Because of this we have undertaken very detailed computer studies. In addition to the consultants I named the other day we have had the Lasalle Hydraulic Laboratory Limited working on computer studies of the movements of the tide. We must see how we can adjust between these two cycles—whether we can develop storage projects which would permit us to produce energy when the tides are there, store the energy in pump reservoirs and then generate it when the load demands it, or whether we should develop two or more tidal projects in parallel with one another so that one can operate with a high pool, the other with a low pool, thereby getting a certain amount of continuous power.

Mr. Gilbert: When do you expect your study to be completed?

Mr. MacNabb: Under the present schedule we should have all input completed by the end of this year and the report available in mid-1969.

Mr. Gilbert: Thank you, Mr. MacNabb.

The Chairman: Mr. Howard, I believe you have a question for Mr. Drolet or Dr. Harrison.

After Mr. Howard's question we will adjourn and then continue with Mr. Drolet and Dr. Harrison at Thursday's meeting.

Mr. Howard (Okanagan-Boundary): I would like to ask Dr. Harrison some questions regarding the recent study that was done on observatories.

I understand that your Department was responsible for a study done on the Queen Elizabeth Observatory. It is my understanding that there are two schools of astronomy in existence in Canada, one that deals with the spectrum and one that has to do with transparency of the atmosphere. Could you tell me who the people were that were in the group that did this recent study regarding the Queen Elizabeth Observatory?

• 1225

Dr. Harrison: Mr. Chairman, Mr. Howard is correct in his designation of the two types of astronomy. The report that was prepared was for the Privy Council office and, as far as I know, the report has not been released as yet. It is generally referred to as the Rose Report and it was under the chairmanship of Dr. D. C. Rose who was formerly with the National Research Council.

Mr. Howard (Okanagan-Boundary): I believe there were some other members on the Committee too.

Dr. Harrison: Yes.

Mr. Howard (Okanagan-Boundary): Could you tell me who they were?

Dr. Harrison: I am not sure, sir, whether or not this is for general publication. Perhaps it is up to the Privy Council Office to release this information, sir, if they so see fit.

I can tell you, Mr. Howard, that they are two very capable and well-known figures in Canadian astronomy.

Mr. Howard (Okanagan-Boundary): The point I want to question you on though is this.

As I understand it, the two schools of astronomy have a different geographical locus as well as a different basis as far as science is concerned—the one school being based in the West and the other in the East, and I understand that the people on that Committee who made the study were all pretty closely related with the eastern school.

Dr. Harrison: Mr. Chairman, I realize I was being a little ridiculous in not giving the names. This team travelled across Canada and took evidence all across the country. They were Professor W. Wehlau of the University of Western Ontario, and Dr. C. S. Beals the former Director of the Observatories Branch. I do not think you could say there was any particular bias east or west in this group. Dr. Beals had been an astronomer in Victoria for many years before becoming Director of the Branch and Professor Wehlau was of course at the University of Western Ontario. Dr. Rose was not himself an astronomer in the sense that we normally use this term; he was an arbiter, if you like, between two conflicting points of view.

Mr. Howard (Okanagan-Boundary): But was it not an argument between two schools, each of them equally valid in its own field?

Dr. Harrison: I would hesitate to go so far as to say that, sir. There certainly was an element of competition. The Dominion Astrophysical Observatory in British Columbia has been concerned basically with what you referred to as spectroscopic astronomy—that is, studying the spectra, the way light is broken up by the different stars, and the University of Toronto and, generally speaking, the universities in central Canada have been concerned with the photometric observation of astronomical bodies—the actual photographic techniques to photograph these bodies. They require somewhat different kinds of apparatus. A photometric telescope demands a much clearer, sharper atmosphere and the seeing quality of the atmosphere must be better than is required for the spectroscopic type of astronomy.

Mr. Howard (Okanagan-Boundary): The Prime Minister stated the other day in Kingston that there seemed to be some question whether the right decision was made originally when the choice was made of a site in British Columbia. I presume he is basing his opinion on the report that was submitted to him recently?

Dr. Harrison: It might also have been as a result of some comments that were made by Dr. O. M. Solandt, the Chairman of the Science Council of Canada and other members. I do not think there is any question but what the decision was made on the basis of an astronomical observatory, not on the needs of astronomy in Canada nor indeed what should Canada's contribution, in the first instance, to astronomical research be, and then decide what sort of activity we should undertake on that basis. I do not think this was considered at all. Indeed, up to now it has not been seriously considered, nor has there been an opportunity yet for a study of this particular problem facing Canadian scientists.

• 1230

Mr. Howard (Okanagan-Boundary): In your opinion, the spectroscopic approach to astronomy is a valid approach?

Dr. Harrison: Oh, of course, yes.

Mr. Howard (Okanagan Boundary): Then, if it is a valid approach, would it not seem reasonable to continue after having spent \$4½ million in establishing an observatory?

Dr. Harrison: I think perhaps my own point of view is irrelevant at this time, sir. The decision was made on the basis of economic factors that this was not the time to go ahead and spend more money on something which was of less importance than certain other things that were facing the government.

Mr. Howard (Okanagan Boundary): It has been said that it was based on economic factors and yet at other times the Prime Minister has said it was based on scientific factors. Originally, when the cancellation was made it was based on economic factors but since then we have had the statement that it was not really an economic factor at all but a scientific one. Which was it?

Dr. Harrison: I do not know how I should answer that question; Mr. Howard. I would say that the lack of unanimity amongst Canadian astronomers certainly called attention to the Queen Elizabeth II Observatory in a way that suggested that the priority for that particular instrument was perhaps not as high as had originally been thought.

Mr. Howard (Okanagan Boundary): Of the major scientific projects in Canada that you enter into, do you ever find that the scientists are unified in their opinion as to whether they should go ahead with them?

Dr. Harrison: Rarely, if ever. I do not know of any cases, but there may be.

Mr. Howard (Okanagan Boundary): Thank you.

The Chairman: Before we adjourn, Mr. MacNabb would like to make a correction in a figure he quoted earlier.

Mr. MacNabb: Yes, Mr. Chairman. Just for the sake of the record, when I was talking about the Duncan Dam being completed and the flood control payment received from the United States I mentioned the figure of around \$12 million. The actual payment was \$11.1 million in U.S. funds and \$11,929,000 in Canadian funds.

The Chairman: Thank you, Mr. MacNabb. We will now adjourn this meeting.

Mr. Gilbert: Mr. Chairman, before you adjourn, I met Dr. Tinney going out as I came in and he expressed disappointment that he had prepared all week-end for questions and no one was here this morning to ask them. I thought the members would like to know that.

The Chairman: We will meet in this same room at eleven o'clock on Thursday morning.

OFFICIAL REPORT OF MINUTES
OF
PROCEEDINGS AND EVIDENCE

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ALISTAIR FRASER,
The Clerk of the House.

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Publications,
HOUSE OF COMMONS

First Session—Twenty-eighth Parliament
1968

STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 7

THURSDAY, NOVEMBER 14, 1968

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources

WITNESSES:

From the Department of Energy, Mines and Resources: Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J. P. Drolet, Assistant Deputy Minister (Mineral Development); Mr. W. K. Buck, Director, Mineral Resources; Mr. N. Ignatieff, Deputy Director, Mines Branch; Mr. S. G. Gamble, Director, Surveys and Mapping Branch; Mr. R. B. Code, Senior Personnel Adviser; and Mr. J. C. Allen, Senior Financial Adviser.

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

Allmand	Gilbert	Ricard
Beaudoin	Grills	Ritchie
² Breau	Harding	Roy (<i>Timmins</i>)
Chappell	³ Harries	Sulatycky
Code	Moores (<i>Bonavista-</i>	¹ Weatherhead—(20).
Comeau	<i>Trinity-Conception</i>)	
Deakon	Orange	

(Quorum 11)

J. H. Bennett,
Clerk of the Committee.

¹ Replaced Mr. Howard (Okanagan Boundary) on November 13, 1968.

² Replaced Mr. Guay (St. Boniface) on November 13, 1968.

³ Replaced Mr. Marchand (Kamloops-Cariboo) on November 13, 1968.

ORDER OF REFERENCE

HOUSE OF COMMONS

WEDNESDAY, November 13, 1968.

Ordered,—That the names of Messrs. Weatherhead, Breau and Harries be substituted for those of Messrs. Howard (Okanagan Boundary), Guay (St. Boniface) and Marchand (Kamloops-Cariboo) on the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER,
The Clerk of the House of Commons.

MINUTES OF PROCEEDINGS

(Text)

THURSDAY, November 14, 1968.
(7)

The Standing Committee on National Resources and Public Works met this day at 11.05 a.m. The Chairman, Mr. Hopkins presided.

Members present: Messrs. Allmand, Breau, Chappell, Code, Deakon, Gilbert, Harries, Hopkins, Orange, Ricard, Ritchie, Roy (*Timmings*), Sulatycky, Weatherhead—(14).

In attendance: From the Department of Energy, Mines and Resources: Dr. J. M. Harrison, Assistant Deputy Minister (Mines and Geosciences); Mr. J. P. Drolet, Assistant Deputy Minister (Mineral Development); Mr. W. K. Buck, Director, Mineral Resources; Mr. Ignatieff, Deputy Director, Mines Branch; Mr. S. G. Gamble, Director, Surveys and Mapping Branch; Mr. R. B. Code, Senior Personnel Adviser; and Mr. J. C. Allen, Senior Financial Adviser.

The Chairman called

Item 15—Mines, Minerals, Energy and Geosciences—Administration, Operation and Maintenance.

Dr. J. M. Harrison and Mr. Drolet assisted by their associates addressed the Committee and were questioned.

After questioning by the Committee, the following items were called by the Chairman and unanimously approved:

Mines, Minerals, Energy and Geosciences

Item 15—Administration, Operation and Maintenance\$ 35,879,700

Item 20—Construction or Acquisition of Buildings, Works, Land and Equipment\$ 4,530,000

Item 25—Grants, contributions and subventions ..\$ 1,464,000

The Committee agreed that Mr. Drolet supply Committee members with informative material.

At 12.35 p.m. the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Thursday, November 14, 1968.

• 1104

The Chairman: I see a quorum. I will not call the meeting to order.

First of all we have in English and French the Pollution Abatement Research Report which was done by Mr. Tinney at the request of Mr. Deakon.

We have with us this morning Mr. Drolet and Dr. Harrison and they have some of their backup people with them. I will call on Mr. Drolet first to introduce the people who are here with him and then, Dr. Harrison.

Mr. J.-P. Drolet (Assistant Deputy Minister, Department of Energy, Mines and Resources): Thank you, Mr. Chairman. As I mentioned at the last meeting of this Committee, the mineral development group, mainly through its Mineral Resources Division, has the role in Department of Energy, Mines and Resources of advising the Minister on matters affecting Canadian mineral policy.

As I said the other day, in order to fulfill this role we conduct fundamental and applied resource engineering, economic research and field investigations into the problems that concern mainly non-renewable resources. We elaborate policy and programs on regional, national and international bases. I may add that this work covers all phases of the mineral industry, resources, exploration, development, production, processing, transportation and also consumption. To discuss these matters I have with me Mr. Keith Buck, who is Director of the Mineral Resources Division and Mr. E. J. Fraser, Director of the Explosives Division.

The Chairman: Dr. Harrison.

Dr. J. M. Harrison (Assistant Deputy Minister, Department of Energy, Mines and Resources): Four of the major branches or units that report through mines and geosciences are represented here with me today. Dr. Hodgson, the Director of the Observatories Branch is concerned with theoretical geophysics and with the astronomical researches

conducted in this Department. He is away this week with all his senior people on a staff meeting, so he is unfortunately not able to be present. If you have questions on detailed astronomy or theoretical geophysics I will do my best to answer them for you.

We have the leaders or representatives of the other four principal units here today. Mr. Gamble is Director of the Surveys and Mapping Branch, a group that are responsible for providing the fundamental maps of Canada. Dr. Roots is the Co-ordinator of our Polar Continental Shelf Project. He and his group are responsible for co-ordinating the work that was carried out in the high Arctic by this Department and by other departments as well. Dr. S. C. Robinson is representing the Director of the Geological Survey of Canada, a group of people who are engaged in providing the fundamental data for prospecting in Canada. Mr. Ignatieff, a distinguished fuel specialist, is representing Dr. John Convey, the Director of THE Mines Branch, a group who carry out research on mining, utilization of fuels, extraction of metals and the utilization of them.

The Chairman: I believe Mr. Drolet has with him this morning some booklets and some maps that he would like to discuss.

Mr. Drolet: Yes, I brought with me some examples of some of the publications which are produced by our group. I thought it would be interesting for the members of this Committee to have a map of the principal mining areas of Canada. This is a map that is compiled and prepared in our shop every year in both English and French. It gives all information about mining activities in Canada. There is an index. If the members want one I have a roll here.

I did not bring many copies of the reports that we publish, but I have samples of them, and if any member of the Committee wants a specific report I would be pleased to send it to him.

The Chairman: Gentlemen, last time we spent most of the day questioning Mr. McNabb. This morning we have Mr. Drolet

and Dr. Harrison. I will call Item 15 once again and continue discussion. Mr. Gilbert.

• 1110

Mr. Gilbert: I would like to direct a question to Mr. Drolet with regard to the Emergency Gold Mining Assistance Act. I notice an increase of \$800,000, Mr. Drolet. Could you give us some background on that?

Mr. Drolet: As you know, the Emergency Gold Mining Assistance Act was passed in 1948 and was extended recently up to the end of 1970. The main purpose of the Emergency Gold Mining Assistance Act was to reduce the rate of decline in the gold mining industry and also to minimize the economic and social hardships in dependent communities.

We prepare every year a budget for the assistance that we give to gold producers in Canada, and as we know, the price of gold being fixed at \$35 U.S. dollars, it is very difficult for the gold producers of Canada to be economic, so this assistance is given. In the course of the year some mines are closed and new ones are opened. So we do not know exactly every year how much money we are going to spend for emergency gold mining assistance, but it is around \$15 million every year, within \$500,000 or \$600,000. It is difficult to be precise at the beginning of the year because we do not know the number of ounces that will be produced by the gold mines and also the number of ounces that will be eligible for assistance, because not all gold produced in Canada is eligible for assistance.

Mr. Gilbert: Is the government buying all the production of gold or is some of it being sold on the open market?

Mr. Drolet: Most of the gold is bought by the Government of Canada, the Royal Canadian Mint, but producers have the privilege of selling their gold on the free market, if they think that they will get a higher price. At present we have three kinds of producers of gold in Canada. We have the gold mines that are eligible for assistance because the cost of production is over \$26.50 per ounce. We also have some gold mines that are not eligible for assistance because the cost of production of one ounce is under \$26.50, and we also have gold produced by the base metal mines which are not considered as gold mines. Most of the gold producers sell their gold to the Mint because, having a cost higher than \$26.50 per ounce, they receive \$35 per ounce from the Mint plus an assistance, and

this is a little higher or about the same as they would receive on the free market. Other gold mines, four gold mines as a matter of fact here in Canada, do not receive assistance, and they go to the free market and they are free to do so.

• 1115

Mr. Gilbert: I wonder if I could direct your mind to a statement you made that your Department acts as an adviser to the Department of National Revenue and you spoke briefly about depletion allowances and so forth. What role do you play with regard to that?

Mr. Drolet: As you know, the mining industry in Canada enjoys several taxation privileges, through exemption, depletion allowances, capital cost allowances, etc., and this is for very good reasons, as we all know, because of the nature of the mineral industry. The Minister of Finance usually makes the rules about that and in his budget speech announces measures that are going to be changed or new measures concerning taxation in Canada. But these measures are administered by National Revenue. The Department of National Revenue, for instance, in the case of a three-year exemption for new mines receives an application from a new mine, and we act as advisers to National Revenue on mineral exploration and exploitation. For instance, again in the case of a three-year exemption, we advise National Revenue that this is a new mine or this is not a new mine, because not every hole in the ground is a new mine. A mine is not defined in the Act, but we have a set of conditions for a mine to qualify as a new mine.

If it is a new mine, we give it a three-year exemption until the time it is in production. When does its production start? We have to determine that. We do that for National Revenue and we sit on an interdepartmental committee with them and we make recommendations.

Mr. Gilbert: You have probably made a thorough study of the report of the Carter Commission, Mr. Drolet. How did the Carter Commission recommendations fit in with your experience in determining capital cost allowances?

Mr. Drolet: We have made a study of the Carter Report because as soon as it was published the government invited representatives

of industry, provincial governments, and others, to present briefs and comments on the Carter Report. As far as the mineral industry is concerned, we have received not less than 50 briefs from mining companies and mining associations, and also from provincial governments. As you know, the Carter Commission has recommended the abolition of many of the privileges that are granted to the mineral industry. In our Department we have studied these briefs and we have also studied recommendations of the Carter Report. We have made recommendations to the Department of Finance on the way we see the problem of the Carter Report in relation to the mineral industry. This is in the hands of the Minister of Finance, and he said recently, as you know, that he will present a draft bill and then there will be a parliamentary committee, and once again the people concerned will have a chance to appear and make comments. But it would be difficult at this point to tell you the way we see it.

Mr. Gilbert: You sort of take the joy out of the questioning.

Mr. Drolet: I may see you after.

Mr. Gilbert: There is an approach by a professor that only actual allowances that have been spent with regard to pre-production should be allowed, rather than the approach which is taken at present. Have you any comments on that?

Mr. Drolet: You mean that it would be more useful to the development of our natural resources, particularly mineral resources, to grant greater privileges during the exploration stage—

Mr. Gilbert: Right.

Mr. Drolet:—and the pre-production than to give them incentives and advantages when they are in production?

Mr. Gilbert: Right.

Mr. Drolet: This is one of the points of view that have been expressed to the Minister of Finance.

The Chairman: Thank you, Mr. Drolet.

Mr. Roy: Do you know how much gold is sold by the government on the free market and how much benefit is derived from these sales between the fixed price and the price they get on the free market in the period of one year?

• 1120

Mr. Drolet: No. Details of sales by the Mint are not available but it is estimated that the profits realized by the Mint are in the order of 35 to 40 per cent, which would mean that the government's net expenditure in the order of \$15 million per year on assistance to gold mines would be lower by that much.

Mr. Roy (Timmins): That is, 35 to 40 per cent of \$15 million.

Mr. Drolet: I suppose, yes.

Mr. Roy (Timmins): So that this EGMA figure of \$15.6 million is not a true figure since the government derives benefit from the open market sales.

Mr. Drolet: Right, sir. You would have to subtract any profit that is made by the Mint.

Mr. Roy (Timmins): I am having a hard time getting this figure.

Mr. Drolet: Yes.

Mr. Roy (Timmins): How much effort has your Department made to influence processing of materials in this country rather than exporting them? It is the policy of the government to export these minerals to provide an economic base for the country, or is any effort made to process minerals in this country?

Mr. Drolet: Yes, certainly. This problem also concerns the Department of Trade, since we are talking about exporting a semi-finished product or a fully manufactured product instead of raw materials. It is certain that every Canadian would be better off, economically, and richer, if all minerals were fully processed in Canada. There is no doubt about that.

You are talking specifically about the very serious problem connected with the further processing of raw materials within the limits of our country. Up to the time of the Kennedy Round negotiations there was also the matter of high tariffs in many countries outside Canada, which prevented us from shipping fully manufactured products to Japan or even to the United States. There was no tariff on the raw material but a very high tariff on the semi-processed or fully processed material. Since the Kennedy Round negotiations these tariffs are lower and so we have a greater possibility now of shipping semi-processed material.

In the case of some mineral commodities, for instance iron ore and petroleum, it is easy

to understand that the raw material has to be processed near the pig iron, steel and petroleum markets. In the case of many metals in Canada, the situation is not as bad as it looks. In the case of copper, for instance, about 85 per cent of it is processed within the limits of this country. In the case of nickel, seventy-five per cent of it is refined within the limits of our country. In the case of lead and zinc, it varies between 50 and 60 per cent. However, there are many other mineral commodities in Canada that are not fully processed. We produce sixty different minerals in this country. You must also consider that minerals are exported to nearly 90 countries, and we must compete for the markets. We also have to compete with other countries that are very happy to ship the raw material.

• 1125

The problem of further processing of minerals in this country is directly associated with the problem of foreign ownership. You can understand that foreign owners of some of our minerals in this country prefer to ship these raw materials to their own countries where they are processed. We are making progress in this field all the time. Mineral economists who are working under Mr. Buck are continually assessing these questions. Committees are working to develop new markets in Europe, South America and elsewhere, always in conjunction with the Department of Trade and Commerce. Before the Department of Trade will issue a permit to export materials in the raw form we must analyze and assess the situation completely to see if we should not force this company to further process their materials here. We have to follow supply and demand in the world and actually, with regard to some minerals, if we were to say that they cannot go out of the country unless they are completely refined we would not sell them at all.

The Chairman: I believe Dr. Harrison wants to make a comment before you go on to your next question.

Dr. Harrison: I would just like to point out, Mr. Roy, that in addition to economical studies of these things by the Mines Branch the mining and metallurgical research group spends a very substantial part of the money allocated each year improving techniques and conducting research to further the processing of minerals and mineral products in this country.

Mr. Roy (Timmins): If you will allow me, I would like to mention a specific case. Texas Gulf, which is in my riding, is presently exporting, with the exception of half of its copper, its full production. What efforts are being made or can be made by your Department to influence these people to process these materials here? The provincial government, although deeply concerned, seems to be of the opinion that this simply calls for an economic decision, and Texas Gulf will make it. Does your Department enter into this in any way, shape or form and, if so, how does it?

Mr. Drolet: Yes, we do indirectly because this is in the hands of the provincial government, as you have already mentioned. I am sure you have read recently of the intervention by the Minister of Mines for Ontario, Mr. Lawrence, who is now having discussions with Gulf Sulphur.

You are right when you say it is an economic decision because we have no monopoly on minerals in Canada. We have to go with the markets. Let us all hope that the decision by Texas Gulf will be to establish a new smelter in—I was going to say in Canada but, for the Ontario people, this would mean Ontario.

Mr. Roy (Timmins): We mean in Timmins!

Mr. Drolet: It is an economic proposition.

Mr. Roy (Timmins): Is it not correct that Texas Gulf is presently exporting their materials on permit from the federal government.

Mr. Drolet: Yes, sir.

Mr. Roy (Timmins): Where is the economic decision in this permit business?

Mr. Drolet: They produce zinc, for instance, which is in oversupply presently not only in Canada but all over the world. If you make a tough decision against a producer like this you will be stuck with your zinc.

Mr. Roy (Timmins): Well, I am afraid the people in our riding do not feel the same way. They foresee their natural resources being taken out of the area—out of the country for that matter. Is there any effort by your Department to influence these decisions? For instance, is your Department in touch with Texas Gulf, who right now are making a study of their future production?

• 1130

Mr. Drolet: No, not directly at the present time, although all the basic data necessary for

the studies have been gathered by us, and we have given this information to the Department of Trade and Commerce, who give permits for exports. I think what the Government of Canada is doing here is proving to Texas Gulf that it will be better for them financially, with the incentives that we have, to do it within the limits of our country. You know Canada pushes very much the idea of free trade for minerals, and it would be very difficult for us to try to punish a company for exporting materials outside this country, to another country.

Mr. Roy (Timmins): Well surely, Mr. Drolet, the processing of these materials, whether it be in the United States or Canada or wherever, is not a punishment. They have to process the materials, so why not at the source?

Mr. Drolet: Right.

Mr. Buck: Could I add a comment? It is a problem with many pros and cons. It is not a simple matter. We import raw materials into this country in the mineral field which are not processed in the country from which they come, and our industry is dependent on them. For instance, until very recently we imported almost all our iron ore in unprocessed form and made steel, and had some very substantial steel plants. In fact, we are the twelfth largest steel producer in the world. Fortunately Canadian problems had been discovered and we are using more of our iron ore, but we are still importing substantial quantities in the southern part of Ontario, in the Hamilton area. This is true of all our coking coal. We import coal, not coke. We make our own coke in this country at our steel plants. One could go on to other minerals as well. The Trail plant of Consolidated Mining and Smelting Co. of Canada Ltd. imported zinc concentrates from Peru in unprocessed form and made zinc metal at their plant. There is quite an interchange of raw materials in unprocessed form, and as Mr. Drolet said, it is certainly the desire and hope of every Canadian to make it sufficiently attractive economically for a company to do its processing in this country because of the benefits which will accrue to the country.

The Chairman: Mr. Harries?

Mr. Harries: Does your Department, sir, have a recent analysis of the economic impact of the Emergency Gold Mining Assistance Act?

Mr. Drolet: Yes.

Mr. Harries: Could it be made available?

• 1135

Mr. Drolet: We produce every year a report on the administration of the Emergency Gold Mining Assistance Act. Now, when you are talking about the economic impact, you probably refer to the communities that are connected with the production of gold in Canada, and recently we have made such a study in order to see what the impact is and where we are going. Because this emergency assistance—it was called emergency in 1948 and we are now in 1968—is still an emergency case. The number of gold mines has diminished, and we foresee that in 1975 there will be only a few gold mines in operation in Canada. Maybe this is the time to sit down and study the problem in depth, and make recommendations to the government towards a solution.

The number of employees in these gold mines receiving assistance is in the order of 9,000 people, and the population of adjacent communities is about 140,000 people. If we look at all the dependent population of communities adjacent to these gold mines, it is in the order of another 50,000 people. So there is a lot of employment, either directly or indirectly, with these gold mines. But the way it is going now, with the diminishing of the number of gold mines every year, I think we have to review the problem, and we are now making such a recommendation to our Minister. We already have preliminary reports, but they are not available yet to the public.

Mr. Harries: I would like to see some evidence of a cost benefit analysis for this kind of expenditure. I gather that we will have to wait, however.

Mr. Drolet: As I have already mentioned about the amount of \$15,000,000 a year since 1948, the total amount that has been paid up to September 30, 1968—this is the latest figure I have—is about \$255,000,000. And as for the number of men employed in the industry, that represents about \$1,500 annually per man employed in the gold mining industry receiving assistance.

Mr. Harries: But, you see, that kind of a statistic assumes that if you did not pay that subsidy they would not be employed, and that is maybe one of the questions that ought to be analysed.

What work has your Department done or participated in with regard to solids pipe line research and analysis?

Mr. A. Ignatieff (Chief, Fuels and Mining Practice Division, Department of Energy, Mines and Resources): Mr. Chairman, knowing that the principal contribution in this field started and continued in the Research Council of Alberta some years ago, we did not think it was right to duplicate experimental expenditures, but we have kept in very close touch with them. They were specializing essentially in two directions, trying to reduce the cost of the transportation of coal from the West to the East in the form of a coal slurry, that is, coal and water, and also the development of a capsule system which could be used for any product. They had wheat in mind. This work has now reached a point of going beyond the bench scale, and a research association has been formed—a consortium of a number of companies—assisted financially by the Department of Industry. An up-scaled pipe line loop was built, tests have been run, and at the moment this whole project is being evaluated. We felt that this was a cheaper way for sharing research costs than for the Department to undertake the work itself. We have a considerable amount of information on the possibilities of pipe lining in Canada.

Mr. Harries: In such things as petroleum and iron ore you have to process near markets. Can you give us a reference to any work that you have done to determine that as a factor, or is this a presumption upon which the analysis is conducted?

• 1140

Mr. Drolet: Let us take the case of the iron ore, about which I know more in particular. Large iron mines in Canada have been opened not by people in the iron ore business but by people in the steel business. Take the large developments in Quebec and Labrador, for instance; these were opened by large American companies who needed large reserves of iron ore. They invested hundred of millions of dollars in this business in order to have a sure supply in North America. I must say that we were lucky in that the taxation system in some parts of the United States was not favourable to these companies and they came to Canada.

From these iron ore mines we started to export only the raw material right from the pit. We put it in boats. Part of it went to Europe but the greater part went to the Uni-

ed States through the St. Lawrence Seaway. These same iron ore mines now are producing concentrates, and they are also producing pellets—which is a form of further processing.

There is also the case of some Canadian steel companies importing, as mentioned by Mr. Buck a few minutes ago, all the iron ore that they need—these large steel companies in the Hamilton area, for instance. Now you will see these same companies, because they are users of iron ore, going into the exploration business and opening up iron ore deposits in Northern Ontario, for instance. I am thinking about the Griffith Mine and also the Sherman Mine. The Sherman Mine, which is 90 per cent owned by a Canadian steel firm and 10 per cent by an American iron ore operator, will be producing pellets for use by a steel plant in Hamilton. You see, there is progress being made with foreign control. It all depends on the markets you have. In the case of the Sherman mine there was a ready market for this Canadian steel industry, in the case of the big ore companies in Northern Quebec and Labrador the big market was in the United States—although a small part also goes to steel firms.

Mr. Harries: Would you direct a comment to the question of petroleum and crude oil and indicate particularly what your analysis shows for the Montreal market, if you have done such work?

Mr. Drolet: The National Energy Board are doing the analysis in the case of petroleum.

Mr. Harries: So your Department does not do any analysis in connection with petroleum?

Mr. Drolet: Those people under Mr. MacNabb, Adviser on Energy, who were here yesterday are involved in these analyses but not people of my group.

Mr. Harries: Is there any relationship between your research work in the Arctic and the processing of either crude or ore up there and, if so, who does this economic study?

Dr. Harrison: I think that the question of economic returns from the Arctic is still pretty academic. We still have not found the oil that we believe exists in the Arctic. There are continual studies of course on the economic potential of what could be done with the petroleum if it is found there, but this depends on so many other variables at any given moment in time that it is difficult to

give a reasonable answer. I know that we in our Department cannot do this and I am quite sure there is no one else at the moment who can.

Mr. Harries: My point in asking the question is this. As you know, a number of studies are under way with respect to transportation of arctic oil from the Alaskan Shelf area. Has your research extended to the point where some group within the Department is now actively concerned about the transportation of our oil and mineral potential in that area through a solids pipeline on an oil line that may initially be located and get its main thrust from American development? Quite frankly, I think there is some evidence to indicate that if we wait around until we decide to form our policy, after the hard decisions have been made, we are going to be too late. That is why I am wondering where this thinking would be done, sir.

• 1145

Dr. Harrison: As Mr. Drolet mentioned a minute ago, mostly by Mr. MacNabb's group on the Energy Development side. They are carrying out studies precisely along the lines that you mentioned and are getting a good bit of their input from other agencies of government.

Mr. Harries: Yes, I am sure. Thank you, sir.

The Chairman: Mr. Ritchie.

Mr. Ritchie: On the subject of gold mining subsidies or assistance, Mr. Drolet, other than the social problem—I mentioned 9,000 workers who might not have jobs if this assistance was discontinued—would we as a country gain by producing gold even though we may subsidize some portion of it?

Mr. Drolet: The Government of Canada tells us they need gold. They can get part of that gold from base metal mines. As a matter of fact, 18 per cent of the gold produced in Canada is produced as a by-product by base metal mines. We do not refer to these mines as gold mines because a gold mine in Canada is one that produces at least 70 per cent of its total output in gold. We have gold mines in existence in Canada that were opened many years ago when they did not need a subsidy. Now we are faced with the problem of having these mines in existence. This is why we try to help them under the Emergency Gold Mining Assistance Act. We certainly need gold, since

it is the basis of our foreign exchange. But how much do we need? Will there be enough produced from mines that are not pure gold mines? That is a question that I cannot answer.

Mr. Ritchie: I would like to ask a question too on potash. I believe this would come under your Department?

Mr. Drolet: Yes, sir.

Mr. Ritchie: There are some reports that our Canadian mines may soon find themselves in the position of over-producing for the needs of the world at large, presumably outside of Canada. How do you feel about this?

Mr. Drolet: Many potash mines have been opened recently, principally in the Province of Saskatchewan. As a matter of fact, I think we have there the largest reserves in the world—reserves are counted in 100, 150 or 200 year periods. Actually there is an over-supply of potash on the national and international markets, which has created many problems for the potash business. These people made plans some years ago to open these mines when the price of potash was much higher than it is now, so they certainly do not make the profits that were anticipated. From the analysis that we have made in our Department we expect there will be an over-supply of potash in Canada for a few years only and then it will pick up.

Mr. Ritchie: Is fertilizer the main end use of potash?

Mr. Drolet: That is right, sir.

Mr. Ritchie: I understand the Simplot complex at Brandon, partly based on potash, might have been developed anywhere in the Dakotas, Montana or any of the prairie provinces, that it was just a case of location. What governs the location of this sort of complex, and why were there so many variables?

• 1150

Mr. Drolet: What complex was that?

Mr. Ritchie: I thought the Simplot Plant could have been located in various locations, all the same so far as the company was concerned.

Mr. Drolet: I am sorry; I do not know the answer to that question, sir. I will try to find out the information for you, but at the moment I do not know.

The Chairman: Shall Item 15 carry?

Item 15 agreed to.

The Chairman: Mr. Gilbert, Mr. Allmand was first. I will continue the first round with Mr. Allmand and then I will call on you, Mr. Gilbert.

Mr. Gilbert: Yes, Mr. Chairman, you are quite right.

Mr. Allmand: Mr. Chairman, has the Department tried to obtain any information about surveys on a world basis? In other words, does the Department try to determine the possible production of minerals throughout the world so that this information can be passed on to Canadian producers and those in marketing? Do they do it through international conferences, or by an exchange of information with similar departments throughout the world? How is it done exactly?

Mr. Drolet: Yes, we do it in all these ways, sir. We are well informed on what is going on in the world, and we are more specifically informed on those minerals of which we are the most important producers. For instance, in the case of nickel, asbestos and various other minerals, to foresee and forecast the markets in Europe we have to study and also visit other countries where large deposits exist.

You may remember that a few years ago we were reading many reports about Canada producing so much asbestos and that we were supplying, let us say, 75 to 80 per cent of the world market. This is not true any longer because there are now other large producers, among them, Russia, which invade some European markets. We have, therefore, to be informed all the time about deposits that exist in South America, in Africa, and in Australia where actually numerous new finds have been made, so as to know in advance where we can develop or keep our markets.

We also go on missions. For instance, I have here a copy of a report of a mission to eastern Europe in which we participated in order to evaluate the market situation there. By the quality of its cover you will see that it is not a flashy-looking report, but it lists the pertinent and relevant information and even the names of those you should contact in, say, Czechoslovakia or Hungary if you wish to sell one mineral or another.

Missions such as that are organized by the Department of Trade and Commerce and a

very large output is obtained by the setting up of these missions.

Mr. Allmand: Are other countries in the world usually co-operative and frank in revealing what their mineral surveys are and what they hope to put into production, and so forth?

Mr. Drolet: Usually, yes, sir. We, in Canada, receive hundreds of delegations every year from around the world, some better-known than others because they visit us every second week. As you will also understand, there are countries in the world that are more difficult to visit, but in which we are rather well-informed on what is going on, through international organizations to which we belong, such as the United Nations.

We also have representatives at all OECD meetings and UN meetings on specific minerals, such as the lead and zinc group, the iron and steel group, the International Tin Council, and on tungsten, and so on. We are represented at these meetings. It gives some of us an opportunity to spend a few days in Paris or Geneva every year.

Mr. Allmand: Do you have much information on the mineral potential and production potential of minerals in China?

• 1155

Mr. Drolet: Very little, through our own assessment. We depend on international publications.

If you are referring specifically to Communist China, we do not have much information except that we know that it is a very large producer of coal. As a matter of fact, we know that the value of mineral production in China is higher than that of Canada, but it is based only on one mineral commodity. This is also the case in Venezuela, where they have a higher value of production, but based only on oil—one mineral commodity. This is why, when we talk of Canada, we say that this is the third largest diversified mineral economy in the world after the United States and the U.S.S.R.

Mr. Allmand: What of the exchange of scientific and technical information, new methods of production, and so forth?

Under this item in the estimates I note that you belong to several international organizations. Is much useful information on new methods and new technology exchanged through these conferences?

Mr. Drolet: In the case of my group it is in the field of economics. There are other fields in this Department, and those under Dr. Harrison and, more specifically, in the Mines Branch and in the Geological Survey of Canada—I suppose every branch of the Department—work on the basis of continual exchange of information with other countries.

My group is part of the Organization for Economic Co-operation and Development—the OECD—and there we sit on the committee on iron and steel, on the committee for non-ferrous metals, and the European nuclear energy agency; and at the United Nations we are on the international lead and zinc study group, on the economic commission for Europe steel committee, and on the committees on tungsten and the international agreement on tin. We are also represented on GATT, the General Agreement on Tariffs and Trade. We have had a representative of our Department in Geneva for almost two years for these negotiations.

Mr. Allmand: I see listed an office called the Geological Liaison Office. What exactly does that do?

Dr. Harrison: Canada sponsors a Commonwealth scientific office in London. One of the aspects of this concerns the use of mineral resources for developing countries, and especially in the light of the independent nature of the growth of nations as independent groups within the Commonwealth, this was set up as a major focal point at which all the Commonwealth countries could get specific information that might help them in their own development.

Canada contributes a few thousand dollars a year to keep that office going. New Zealand, Australia, United Kingdom, Pakistan, India and many other countries all contribute towards the upkeep of this office.

Mr. Allmand: Do we receive information from it, too, in addition to giving information?

Dr. Harrison: Yes, indeed; it is a clearing house for geological information relating to many aspects not only of the Commonwealth but of world resources in the minerals field.

Mr. Allmand: Thank you, Mr. Chairman.

The Chairman: I have Mr. Deakon, Mr. Gilbert and Mr. Chappell on my list. Perhaps it would be proper for me to call Mr. Deakon and Mr. Chappell before Mr. Gilbert, as

members of the first round of questioning. Mr. Deakon?

Mr. Deakon: Mr. Chairman, the questions I wish to pose to Mr. Drolet pertain to the actual Estimates. I have examined some of these breakdowns and I note specifically, under Item 15, a reference to "Field and Air Surveys, Mapping and Aeronautical Charting." That is on page 78 of the Revised Estimates. There seems to be a considerable increase in salaries in the 1968-69 Estimates, although there is only one extra employee.

Notwithstanding that large increase, under "Other Professional and Special Services" there is an exorbitant increase from \$37,000 to \$133,000. Could you explain that to me?

• 1200

Dr. Harrison: Mr. Chairman, before I introduce Mr. Gamble to comment on this specifically I would like to point out that the adjective Mr. Deakon used, "exorbitant increase", I think is perhaps one that Mr. Gamble would like to comment on.

Mr. S. G. Gamble (Director, Administration, Surveys and Mapping Branch, Department of Energy Mines and Resources): Mr. Chairman, as I understand Mr. Deakon's questions they are primarily concerned with the increase in professional services. This is because of the need to provide survey service—this is a legal survey service—in the territories, including the surveys of Indian lands, and so forth. The demands placed upon this part of our operations are greater than we can meet with our own staff and so we have deliberately engaged professional surveyors to undertake a lot of these types of surveys, so this has been increasing the number of legal surveys for federal government administrative purposes.

Mr. Deakon: I have another question, Mr. Chairman. On page 79 of the revised estimates you show a figure of \$75,000 for overtime. Is that a necessary situation? Can they not do the job during ordinary working hours?

Mr. Gamble: Mr. Chairman, I think this particularly affects our printing plant operations. We have a large investment in printing plant and where we want to get more accomplished than we can during the normal working hours, considering the equipment and housing and all the other investments it is more economical to go for extra time with the

present staff than to find other ways and means of getting the added production.

Mr. Deakon: Are you saying that you have your own printing plant for the purpose of printing publications and technical reports too? Does your own plant do that?

Mr. Gamble: No, no. We publish the maps for Canada, not only for the Surveys and Mapping Branch and for the Department as a whole, but also for a lot of their agencies in the government. It is a map publishing plant.

Mr. Deakon: Are the publications and reports for the department passed off to private agencies to do for you, or do you have your own plant there too?

Mr. Gamble: They are done in a number of ways. Quite frequently, depending on the quality of the report, the Queen's Printer does most of this work, although there will frequently be maps that we publish appended to the reports.

Mr. Deakon: The reason I asked that question is because you also have an item regarding the publication of technical reports in each one of these branches.

Dr. Harrison: That is handled through the Queen's Printer. The publication of reports is the responsibility of the Queen's Printer and there is a pro rata assessment of the estimated costs of the reports, and so on, which is the item that appears in the budget for each individual component.

Mr. Deakon: I see. I notice here also, Mr. Chairman, an increase in each one of these branches for travel and removal expenses. Do we do more travelling these days in this Department?

Dr. Harrison: That is right. I saw some figures on that recently—I cannot remember them—but the travel in this Department also includes the travel for field operations, the necessary part of transporting people from their place of employment—wintertime employment if you like—to their places of seasonal employment. This is a very substantial component of the departmental travelling and removal expenses. Also, because we have recently been establishing regional centres such as Calgary and so on, these people are being transferred to those centres.

• 1205

Mr. Deakon: Thank you, Mr. Chairman.

Mr. Gamble: Mr. Chairman, possibly my answer on the overtime was not complete. I should explain something that escaped my intention. In connection with our field operations, in many areas we attempt to work a seven-day week because of the equipment and because of the environment and the importance of good weather, and so forth, and the men are paid basically on a five-day week. Therefore, where they operate for seven days a week there is this extra payment and this is part of that cost, too.

Mr. Harries: Mr. Chairman, I did not get the answer to the first part of the question, the salary increase of almost \$300,000.

Mr. Harrison: Mr. Code, chief director of personnel, perhaps could answer general questions regarding the increase in salaries.

Mr. R. B. Code (Senior Personnel Adviser): Mr. Chairman, I do not have the figures that were mentioned before me, but I feel that the difference is explained by a rise in salaries generally. I will look at the specific figure you mentioned . . .

Mr. Roy (Timmins): I get 45 per cent.

Mr. Gamble: Possibly I can give an answer to that. There are some 900 employees involved and in addition some 150 seasonal employees, so the total salary bill is in the order of \$5 million. Now, there were increases the previous year—you are concerned with the difference between the previous year, the increase between these two.

There are not always sufficient funds to cover increases because these are not always predictable and there are special arrangements for providing the funds for such increases. Therefore, we are probably picking up the difference and deficiency in the previous year plus forecasting any changes that would occur in the current year.

Mr. Allmand: Are most of the summer seasonal employees university students?

Mr. Gamble: The majority would be, although we do employ a lot of packers, cooks and specialists and so on where such are needed.

Mr. Deakon: Mr. Chairman, may I interject? I understand your casual employment, but you have a special item for salaries under, casuals and others. I am referring, and I think my friend mentioned it also, to the

specific item under field and air surveys, mapping and aeronautical charting, where you have a total figure for salary and wages for the 1968-69 estimates of \$887,000 whereas in 1967-68 the figure was \$594,800. This is what I think my friend is referring to.

Mr. Allen: Mr. Chairman, there is, as Mr. Gamble has mentioned, provision made each year for expected salary revisions, salary increases. Rather than try to anticipate the impact of as yet unannounced increases throughout the various divisions of the branch, the provision for those increases in the amount of 3 per cent of the total payroll of the previous year is put in one place in the budget.

What Mr. Deakon is looking at on page 78 is identified as branch administration, the overhead for the branch. In the figure of \$887,000 there is an amount of \$220,000 as a lump sum provision for general salary increases expected throughout the year. As they are announced and their impact is identified division by division, amounts are transferred from this budget to the other budgets.

Therefore, if you are looking for a real constant dollar comparison in this case you would take \$220,000 from the \$887,000 that you are looking at and then compare \$667,000 in the new year with the \$594,000 in the old year, for Branch Administration itself, as I say, on a constant dollar comparison basis.

• 1210

Mr. Chappell: Mr. Chairman, I would like to deal briefly today with the research items, hoping to get some information from which I may place other questions next week. What is the total of all research items under Mines, Minerals, Energy and Geosciences?

Dr. Harrison: I could not answer your question off-hand. We have figures that have been broken down for past years. A certain amount of this is for administration but basically all the work of the Department is directed toward some aspect of research in the application of results, the revision of scientific and technical data, the assessment of these, and the whole aspect of it directed toward the mission of the Department which was basically to provide information which will enable the mineral industry of Canada to move ahead. So, in one sense, this whole budget is research.

Mr. Chappell: I wish to question, or place some questions on research, in some detail. Can you refer me to any further statement or report which gives a breakdown of the vari-

ous research items, including whether it is done in your own buildings or sub-let out to universities, or done by another department of the government?

Dr. Harrison: I do not know of any report that has been prepared which itemizes this kind of thing. There are reports being prepared at this moment which should be available by next week, I think, or a summary statement which should be available next week, which will indicate the in-house research, the extramural research and contract research, and all the money that is provided for grants, and so on.

Mr. Chappell: And will this report you expect by the end of next week cover all research carried out by the Mines, Minerals, Energy and Resources Divisions and the water side as well? Are they all blended together or are they separated?

Dr. Harrison: I cannot tell you off-hand, sir, but I think they are separate. It will give you a pretty fair accounting, I think, of how the dollar goes in terms of this research.

Mr. Chappell: For example, we have under Administration, Operation and Maintenance, research in astronomy and geophysics. It is rather difficult to know how much of that goes to scientists actually working on research projects, and how much is for building and overhead and all the rest, is it not?

Dr. Harrison: Yes, sir. The acquisition of equipment comes under Item 20, and the amounts granted to outside agencies are on Item 25 for each of these items. The research in astronomy and geophysics includes the costs of operating the total research facility in astronomy and geophysics of the Department of Energy, Mines and Resources.

Mr. Chappell: I shall not take any more time today but if you could let me have any material that would help to break it down, I would appreciate it.

The Chairman: Mr. Ricard.

Mr. Ricard: This came to mind when my neighbour was questioning about potash, and since my question is directed to Mr. Drolet, I would like to use the French language.

[Interpretation]

If I heard well, Mr. Drolet, in your explanations you said there is over-production of potash at the present time and that this over-production would disappear in the next

few years. How do you envisage to reduce this overproduction of potash?

Mr. J.-P. Drolet (Assistant Deputy Minister—Mineral Development): I think that one of the large markets for Canadian potash will be the Chinese market.

Mr. Ricard: As fertilizer, do you think?

Mr. Drolet: Partly as potash, and also processed, as fertilizer.

Mr. Ricard: Thank you.

Mr. Allmand: How much do we actually sell in China?

● 1215

Mr. Drolet: I do not know the exact quantity but I must say, quite candidly, and I am not telling you anything new because you have read many references to this problem, in the Canadian papers up to quite recently there were, in Canada, potash mines controlled by foreign interests which were not in favour of selling the product of the potash mines to China.

As you know, Canada is selling other products to China but, for some months now, a new potash mine has been opened in Canada which is not part of the same organization belonging to this foreign country, i.e. the United States, and which is free to sell—everyone of course is free—but which is more likely to sell to China.

[English]

The Chairman: If I may say, Mr. Ricard, before you go on, we had agreed originally that we would not allow any supplementary questions on the first round of questioning.

Mr. Ricard: I do not think I am the one who asked a supplementary question.

The Chairman: No, you are not, but I want to clarify the situation here. You were interrupted and possibly I should have called Mr. Allmand to order, but I would appreciate if all would abide by this ruling that we shall not have any supplementaries on the first round. Continue Mr. Ricard.

Mr. Ricard: I have just one.

[Interpretation]

In what province, Mr. Drolet, is this new mine located?

Mr. Drolet: I had in mind the Alwinsall mine which is in Saskatchewan, at Lanigan.

Mr. Ricard: Thank you.

Mr. Drolet: These are French and German interests I believe.

[English]

The Chairman: Mr. Sulatycky.

Mr. Sulatycky: Going to the Estimates, Mr. Chairman, I notice that for the years 1965-66 and 1966-67, the revenues under the Branch Administration exceeded the expenditures, and for the current year—or is that for the past year—the expenditures are going to exceed the revenues. There seems to be an increasing disparity in the wrong direction. Is there any way to increase the revenues, sir? Why are the revenues not keeping pace with the expenditures?

The Chairman: Mr. Hamble.

Mr. Allen: Mr. Chairman, I must just say, before Mr. Hamble comments, that once again this is a case where the information for the whole Branch is contained in the first section of the Branch, and so I believe we are looking on page 78 at the total revenue figure for the Branch.

The Chairman: Page 70—it is not in the summary.

Mr. Allen: No, in the blue book, Mr. Chairman.

The Chairman: Page 78?

● 1220

Mr. Allen: The point of my comment, Mr. Chairman, is mainly that this displays the total income of the branch and is set alongside an expenditure figure for the headquarters division of the branch. I suggest this is hardly a reasonable basis for comparison. Mr. Gamble will probably wish to speak to the trend of revenue for the whole branch as compared with the expenditure of the whole branch.

Mr. Gamble: Mr. Chairman, the revenues that come in to the branch come mainly from two sources: the sale of air photos and the sale of maps. This is increasingly progressively as we get better map coverage of the country and as the people become more conscious about the air photos and maps that are available to them. We anticipate that the revenue will increase progressively; and again this is a matter of reappraising the cost of the services provided.

As Mr. Allen has pointed out, the other part happens to be a particular expenditure

of a particular part of the operation; that this is put beside it is not too helpful.

Mr. Gilbert: Mr. Chairman, I would like to question Mr. Drolet again, and it is on the basis that 60 per cent of our exports are to the United States, amounting to roughly \$2 billion. Appreciating the trend of the United States Congress with regard to imposing import restrictions on such mineral imports as lead, zinc and potash, what is Canada's position when you make the remark that foreign ownership plays a dominant role with regard to whether the parent company is going to have the subsidiary do any export trade?

I guess I should follow it up with another question, too. What is the feasibility of setting up a national marketing board with regard to our mineral products?

They are big questions but your are a big man and you have experience in this. That is why I am asking.

Mr. Drolet: I discuss these matters publicly myself when I go around and address the members of the Canadian Institute of Mining and Metallurgy on various boards of trade. I do not know if you want to hear my personal comments here at this Committee; but let us look at the situation coldly. As you said, we export to the United States 60 per cent of our exports in minerals. Fifteen per cent go to the United Kingdom, about 8 per cent to Japan and 13 per cent to the rest of the world. So the United States is our big market.

Representations to Congress have been made very often in recent years by producers of lead and zinc in particular to impose import quotas; these quotas were enforced up to some years ago—until very recently—and they have been taken away. I must say that it is a continuous battle on the part of the Government of Canada with some people in the United States to prevent them from re-imposing these import quotas.

The American Government is also facing the problem with the producers of potash from New Mexico. Some years ago we were not exporting one pound of potash to the United States but now we are invading their markets. A few minutes ago when I answered Mr. Ricard about the places in the world where I was expecting potash will go, I forgot to say that the market in the United States will also grow and in about 10 years we are going to meet their demands.

• 1225

We are making representations in the United States all the time and this is done through our Ambassador and Commercial Attaché in Washington through the Department of Trade and Commerce. We are the people who are making the analyses for these presentations—supplying them with the basic data, and so on. And we are worried very often about this situation.

Mr. Gilbert: What about the feasibility of setting up a national marketing board? I would assume that at the moment the mineral exporters obtain an export permit from the government and export to the particular country.

Mr. Drolet: No, no.

Mr. Gilbert: Just how is it done?

Mr. Drolet: This is only in the case of copper and nickel.

Mr. Gilbert: I see.

Mr. Drolet: As you mentioned the other day there was a time when it was difficult for a Canadian manufacturer to have the nickel that he needed for his manufacture here in Canada while nickel and copper were produced next door and some producers were shipping outside our country because they were able to obtain a higher price. So, by persuasion we have a committee with them. So to answer your question, I suppose you are talking about an agency such as the Wheat Board?

Mr. Gilbert: Yes, that is right. Or an agency, as suggested by Mr. Watkins in his report on foreign ownership and the difficulties of exporters because of certain legislation in other countries—Trading with the Enemy Act in particular. Is it feasible to have a national marketing board?

Mr. Drolet: Well, actually we do not meet with very many problems in the sale of our minerals. We have no problems in entering the United States or any other country in the world. The only problem we have is with the high tariffs in some countries. For instance, why do we not ship more aluminum to the Common Market? It is because there is a tariff of 9 per cent or 7 per cent on most of the metal entering the Common Market. But outside of that we have no problems. We had problems up to the Kennedy Round with the

Japanese market. We do not have as many • 1230
now.

Mr. Gilbert: I thought that the report of the Economic Council of Canada was that the GATT negotiations have produced little effect with regard to the export problem. Are you familiar with the Economic Council of Canada report on that?

Mr. Drolet: Yes.

Mr. Gilbert: You referred to them and this was their summary.

Mr. Drolet: In the field of metals and minerals there were no drastic changes following the Kennedy Round negotiations for one specific reason. It is because in Canada, being blessed with so many different mineral commodities and also so much, although we do not have a monopoly on mineral resources in the world, we did not have much to offer other countries. How would you like to discuss this with the people of another country such as France and tell them they will be able to export nickel to Canada without any tariff. They certainly cannot compete here with our nickel, and this is true of almost every metal and mineral.

But where we have obtained something in the Kennedy Round concerning metals and minerals is more specifically in the field of semi-processed minerals. We pay lower tariffs now to enter Australia, to enter Japan in particular, and also various other countries of the Common Market. As you know, our situation with the United Kingdom was not much improved as most of the minerals exported there were already tariff-free. This is where we may have some problem with minerals when the U.K. joins the Common Market. It will also adopt its tariffs and then we will have to compete over that barrier.

Mr. Gilbert: I see. That is all, Mr. Chairman.

The Chairman: Shall Items 15, 20 and 25 carry?

Some hon. Members: Carried.

Items 15, 20 and 25 carried.

The Chairman: Mr. Drolet?

Mr. Drolet: I have just one remark. I gave to each of you a map called the map of the Mineral Producers of Canada and for more information on the Canadian mineral industry we publish a very fine book every year which is called *Canadian Minerals Yearbook*. Here is the copy for 1966. This is produced in both languages. At the end of it is the map of which you have a copy. For each mineral commodity there are notes about production, where the mines are located and small index maps, also world markets, tariffs and everything for every mineral produced in Canada. You may have these copies from the Queen's Printer for \$7.50 a copy or by asking me direct; they are free to members.

An hon. Member: What is the name of that book?

Mr. Drolet: It is the *Canadian Minerals Yearbook*. Numerous reports, as you know, are published in this division of mineral economics. There is a resume of this big book but it is preferable to have the large one. Various studies have been conducted on a particular commodity. Here is one example, the copper industry, and we have them on nickel and uranium. We produce also an operators' list which gives the names and addresses and also what they produce for all minerals, industrial, metals, and so on.

Since I had many questions on the Emergency Gold Mining Assistance Act I may also mention to the Committee that we have an Annual Report of the activities of this Assistance Act which shows the names of all the mines, those which have a high production cost or low production cost, and so on.

Mr. Ricard: May I make the suggestion that Mr. Drolet supply to each of us all these publications?

The Chairman: Thanks, Mr. Ricard. I was just going to ask the wish of the Committee in that regard. Is it agreed that we ask that each member of the Committee receive these copies?

Some hon. Members: Agreed.

The Chairman: Gentlemen, I want to thank you for your being here early today in order

that we could clear up these three items and I thank the officials who have been with us this morning as well.

The only time that we can find at present for our Committee meeting next week is at 9.30 on Friday morning, but we are going to take another look to see whether we cannot hold it on another day of the week. Since we

have items 1 and 5 left this will mean that we might have to arrange our time to suit the Minister's schedule next week, because he will be before us at the next Committee meeting.

Thank you very much, gentlemen. The meeting is adjourned.

OFFICIAL REPORT OF MINUTES
OF
PROCEEDINGS AND EVIDENCE

This edition contains the English deliberations and/or a translation into English of the French.

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Translations under the direction of the Bureau for Translations, Secretary of State.

ALISTAIR FRASER,
The Clerk of the House.

HOUSE OF COMMONS
First Session—Twenty-eighth Parliament
1968

Government
Publications

STANDING COMMITTEE
ON
**NATIONAL RESOURCES
AND PUBLIC WORKS**

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE
No. 8

FRIDAY, NOVEMBER 22, 1968

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources

WITNESSES:

From the Dominion Coal Board: Honourable J. W. MacNaught, Chairman;
and Mr. A. Brown, Executive Director.

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and Messrs.

¹ Badanai	Harding	Ricard
Beaudoin	³ Lind	Ritchie
Code	⁶ Marchand (<i>Kamloops- Cariboo</i>)	⁷ Roberts
Comeau	Moores (<i>Bonavista- Trinity-Conception</i>)	Roy (<i>Timmins</i>)
⁵ Crossman	² Penner	Sulatycky
Gilbert		⁴ Watson—(20).
Grills		

Quorum 11

J. H. Bennett,
Clerk of the Committee.

¹ Replaced Mr. Allmand on November 20, 1968.

² Replaced Mr. Deakon on November 21, 1968.

³ Replaced Mr. Chappell on November 21, 1968.

⁴ Replaced Mr. Harries on November 21, 1968.

⁵ Replaced Mr. Weatherhead on November 21, 1968.

⁶ Replaced Mr. Breau on November 21, 1968.

⁷ Replaced Mr. Orange on November 21, 1968.

ORDERS OF REFERENCE

HOUSE OF COMMONS
WEDNESDAY, November 20, 1968.

Ordered,—That the name of Mr. Badanai be substituted for that of Mr. Allmand on the Standing Committee on National Resources and Public Works.

THURSDAY, November 21, 1968.

Ordered,—That the names of Messrs. Penner, Lind, Watson, Crossman, Marchand (Kamloops-Cariboo) and Roberts be substituted for the names of Messrs. Deakon, Chappell, Harries, Weatherhead, Breau and Orange on the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER,
The Clerk of the House of Commons.

(Text)

MINUTES OF PROCEEDINGS

FRIDAY, November 22, 1968
(8)

The Standing Committee on National Resources and Public Works met this day at 9.44 a.m. The Chairman, Mr. Hopkins, presided.

Members present: Messrs. Badanai, Beaudoin, Code, Comeau, Crossman, Gilbert, Grills, Harding, Hopkins, Ilymmen, Lind Marchand (*Kamloops-Cariboo*), Penner, Roy (*Timmins*), Sulatycky, Watson (16).

In attendance: From the Dominion Coal Board: Hon. J. W. MacNaught, Chairman; Mr. A. Brown, Executive Director; and departmental officials.

The Chairman read the recommendations of the 3rd meeting of the Subcommittee on Agenda and Procedure on Wednesday, November 20, 1968, and on motion of Mr. Roy (*Timmins*) it was

Resolved,—That the following revised schedule be adopted:

- 1. That Dominion Coal Board officials be invited to appear before the Committee, Friday, November 22, 1968.
- 2. That officials from Atomic Energy of Canada Control Board and Atomic Energy of Canada Limited be invited to appear before the Committee, Tuesday, November 26, 1968.
- 3. That officials from the National Energy Board be invited to appear before the Committee on Thursday, November 28, 1968.

The Chairman called Items 75 and 80 of the Revised Main Estimates relating to the Dominion Coal Board and invited the Chairman of the Dominion Coal Board, the Honourable J. W. MacNaught to introduce his associates.

The Honourable J. W. MacNaught addressed the Committee and assisted by Mr. A. Brown was questioned.

After questioning, the following items called by the Chairman were approved unanimously:

DOMINION COAL BOARD

Item 75—Administration and Investigations of the Dominion Coal Board	\$ 150,000
Item 80—Payment to New Brunswick in the fiscal year 1968-69 etc.	\$3,397,314

At 11.00 a.m. the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Friday, November 22, 1968

● 0944

The Chairman: Gentlemen, we have a quorum and I call the meeting to order.

● 0945

I shall now call Item 75 of the revised estimates relating to the Dominion Coal Board and invite the Chairman, the Honourable J. W. MacNaught, and the Executive Director, Mr. A. Brown, to take the witnesses' chairs.

On Item 75.

DEPARTMENT OF ENERGY, MINES AND RESOURCES

D—Dominion Coal Board

75. Administration and Investigations of the Dominion Coal Board, \$4,672,686.

At this time I ask the Honourable J. Watson McNaught to introduce the officials who are here with him this morning from the Dominion Coal Board. Mr. MacNaught?

Hon. J. Watson MacNaught, P. C., Q.C. (Chairman of the Board, Dominion Coal Board): Mr. Chairman, and members of the Committee, I assure you that it gives me a great deal of pleasure to be here in front of this Committee today. I am well aware of the important part played by committees in the function of government.

Your Chairman has asked me to introduce the officials. On my immediate right, Mr. Alexander Brown, Executive Director; next to Mr. Brown is Mr. Maurice Lajoie, our Financial Officer; next to Mr. Lajoie is Miss Helen O'Heare, our Assistant Financial Officer; next to Miss O'Heare is Mr. Jean Fortin, our statistics man, and next to Mr. Fortin is Mr. George McCracken who is the Secretary of the Board.

Your Chairman suggested to me that it might be fitting and proper for me to make a few general remarks. He intimated that some of the members were new and that they might not be cognizant of the functions and the origin of the Dominion Coal Board.

The Dominion Coal Board has been in existence for slightly over 20 years. It developed as a result of a recommendation in the Carroll Commission report. Coal has always been a source of some anxiety to Parliament and for many years it has been necessary to subsidize coal to keep necessary mines in operation. Judge Carroll looked into the situation very carefully and he suggested that a board be set up, a board pretty well divorced from the civil service of Canada, consisting of persons who were drawn from different parts of Canada and interested in various aspects of coal.

The Board was to consist of a permanent Chairman and directors, not exceeding seven. At the present time we have the Chairman—myself—and four members, three of whom have been on the Board since its inception in 1947, Mr. William Whittaker of Calgary; Mr. Percival Streeter of Saint John, New Brunswick; Mr. Ian MacLaren of Toronto and a relatively new member, Malcolm Brodie of Vancouver.

The Board deals with several different functions. Basically we were set up to give advice to the Minister and the government on matters relating to coal. We also were entrusted with the responsibility of administering subventions and I suppose most people associate that part of our work with the Coal Board. When they think of the Dominion Coal Board, I think most people think of the subventions that the board has administered over the years to keep various mining communities in operation.

We also have done a substantial amount of research work. By that, I mean we have encouraged research at the universities and we have given grants to assist research because in Canada, unfortunately, very little research work has been done by the coal industry itself and that is in sharp contrast with what goes on in the United States. We have been able to draw rather heavily on the results of the research in the United States.

We have also functions to administer under the Coal Production Assistance Act. That Act was passed to permit the Board to make loans

to companies to modernize and to get new machinery. Over the years I think we have made 33 loans, a great many of which have been paid off in full. I think with one small exception the record has been pretty good with the loans made by the Dominion Coal Board.

We also have to administer payments under the Canadian Coal Equality Act. That is an Act under which we pay money on coal used for the production of coke for the manufacture of steel in Canada. We pay 49.5 cents for every ton of coal used for the manufacture of coke in Canada to be used in the production of steel. That function ceased to exist on April 1 and we are no longer authorized to make loans under the Coal Production Assistance Act. We still have to collect the money outstanding and supervise the loans to some extent, but no new loans nor new payments are made under the Canadian Coal Equality Act.

That, in very brief, gives some of the functions of the Coal Board.

The Chairman: Thank you very much, Mr. MacNaught. Shall Item 75 carry?

Mr. Comeau: Mr. Chairman...

The Chairman: Before you begin, Mr. Comeau, I might remind all members that I shall allow each approximately 10 minutes for questioning on the first round with no supplementaries. All right, Mr. Comeau.

Mr. Comeau: Mr. Chairman, first of all, is this a full-time board, Mr. MacNaught?

• 0955

Mr. MacNaught: Mr. Chairman, the Chairman is a full-time officer. The members of the Board serve when called together at the request of the Chairman. They are paid on a per diem basis with travelling expenses. It has very seldom been necessary to meet more than five times in a year—four to five times a year is about the average.

Mr. Comeau: You mentioned research in universities. What type of research is this and have you concluded anything regarding the future of the coal industry in Canada?

Mr. MacNaught: One of the chief research projects carried out under the direction of the Board had to do with the determination of how sulphur could be reduced in coal. To make good coke you have to have coal that is relatively low in sulphur. In the Cape Breton

area the sulphur in coal is slightly higher than desirable and we asked a firm of associates in Toronto to carry out experiments leading to some method whereby that sulphur could be reduced economically.

As a result of those investigations and experiments, they have produced a report which indicates that the sulphur can be removed to an acceptable level at an economic price, so that it will no longer be absolutely necessary to import low-sulphur coal from the United States to make coke.

That was, I think, one of the most significant developments or experiments carried out under the direction of the Board.

Mr. Comeau: Sir, in your opinion is there a future for the coal industry, especially in the Cape Breton area?

Mr. MacNaught: Mr. Comeau, that is a very difficult question to answer. If you had asked me if there was any doubt about the future of the industry in Alberta or British Columbia, I would unhesitatingly say: "There is no doubt whatever." There is a tremendous future ahead for the coal industry in the Rocky Mountain area and in Alberta and Saskatchewan.

Mr. Comeau: Might I interrupt you?

Mr. MacNaught: Yes?

Mr. Comeau: What is the difference? Why do you say there is a future for Alberta coal and Cape Breton—

Mr. MacNaught: Well, this is the difference: in the West there is a new market—a burgeoning market—opening up with Japan. Japan is very much interested in the production of steel and iron and they require a tremendous amount of metallurgical coal, that is, coal that can be made into coke that would be used in the manufacture of iron and steel.

In the past they have been getting a lot of that coal from the United States and more recently from Australia. However, it has been found that the coal in Coleman, in Fernie and farther north in Smokey River in the Rocky Mountains, is very, very suitable for the manufacture of steel and a market has developed there which will increase. For example, four long-term contracts have been negotiated with the Japanese government; one by Coleman Collieries Limited involving about 15 million tons of coal over the next 15 years; one with The Crow's Nest Pass Coal Company—now Kaiser Steel—involving about 45

million tons of coal over the next 15 years; one with Luscar involving about 15 million and a smaller one with Canmore. All together I think about 85 million tons of coal are involved and in the next 15 years that will mean almost \$1 billion American coming into Canada. In the Sydney area you have a mining community that has been in existence for a very long number of years. The coal seams run out under the Atlantic Ocean and from the pithead to the face a distance of four—and in some instances almost five—miles is often involved. In other words, the coal has to be brought back a distance of four to five miles to the surface. If it is a slope mine it comes back by car to the surface; but in a shaft mine it is hoisted to the surface. That is expensive.

In the beginning it was recognized that we had coal on the East coast and coal on the West coast of Canada, but the industries were in the centre of Canada. Of course, it did not matter much when people burned coal in their furnaces or in their kitchen ranges, that did not make much difference. There was some sort of a market for it. However, people gradually decided not to burn coal in their furnaces or to shovel coal; they used more sophisticated types of fuel such as oil, and in the West they used gas. So, the domestic market disappeared. About the same time the railways decided to dieselize their engines. At one time the railways used to provide the greatest market for coal in Canada, and then suddenly they decided to dieselize. There was no more coal required for the railways or for the domestic user. The problem of what to do with the coal then arose. Aid by way of subvention permitted it to come to Ontario and to the Province of Quebec in large quantities, but at quite substantial payments. There was also a market for coal for the generation of electricity in the Maritime provinces. American coal could be brought in cheaper because they could produce and mine it much more cheaply in the United States than we could in Canada. Their mines were nearer the surface, they had no problems with underground water, and so on, and their seams were relatively level. They did not have pitching, seams or anything like that. That was the first thing that disturbed the market, but in recent years the significant thing has been the competition from residual oil. Residual oil from Venezuela can be landed in Halifax and all along the seaboard at a very low price, about \$2.10 a barrel, and it takes about 4½ barrels of oil to equal a ton of Sydney coal in

heat value. It comes in for a little over \$8 and in some mines it costs almost twice that much to produce a ton of coal. So, with the competition from residual oil and the long distance that coal has to be hauled, from Sydney to Ontario or Quebec, there is not a great future in the Maritimes for shipping coal to these markets.

If the experiment that I told you about works out as successfully as we think it will, a market will be recovered for the production of coke to make steel for the Sydney steelworks. Then with a small subvention, and with better methods of producing coal, they may get the cost down. I think it will be possible to eventually phase out some of the mines and probably get down to two to three million tons of coal a year, or something like that, and there will be those markets for it.

• 1005

Mr. Comeau: You mentioned Japan as a possible user of Alberta coal. Do you foresee any chance of exporting this Sydney coal if the sulphur content can be reduced so that it can be used for steel production?

Mr. MacNaught: If the sulphur content can be reduced economically, then 500,000 to 700,000 tons of coal could be used in the Sydney area. However, I do not anticipate that we will ever be able to export very much coal overseas from the Sydney area, for example, because they will always be faced with the competition of American coal.

Mr. Comeau: Mr. Chairman, I would like to ask one further question.

I think it was yesterday or the day before when they presented the Devco report, and I believe it was suggested that a new mine was opening up.

Mr. MacNaught: Yes, the Devco report. It was tabled in the House of Commons three or four days ago.

Mr. Comeau: I believe it was mentioned that they were opening up a new mine down there.

Mr. MacNaught: That is a difficult matter for me to comment on because on April 1 of this year the Cape Breton Development Corporation took over the operation and ownership of the four large mines on Cape Breton island, the Princess colliery, at Sydney Mines, No. 12 at New Waterford and Nos. 26 and 20 at Glace Bay, and they are now operating those

mines. We no longer have to pay them subvention, so we have very little to do with those mines now. I know that for many years it has been a moot question whether a new mine should be opened at Lingan. That is the last large block of coal in the good seam that is still available. There would be merit in opening that mine because they would be mining coal within half a mile of the surface, and they would be able to start this mine with all the modern facilities, machinery, and so on, and with the expertise that we now have. If they opened that mine, it is very likely they could produce coal that would be much more competitive than the coal that is being produced today.

Mr. Comeau: I have some further questions, but I will pass, Mr. Chairman.

The Chairman: Mr. Sulatycky.

Mr. Sulatycky: Mr. MacNaught, is the sulphur content of the Cape Breton coal large enough that it would be possible to sell it if you could extract it from the coal?

Mr. MacNaught: I am told that the commercial possibilities are negligible, that at the present time it is purely a by-product. At the moment the amount of sulphur is probably 2 to 3 per cent. One per cent is acceptable for making coke, and what you would be taking out would be a relatively small amount. I do not believe that it would be a commercial product.

Mr. Sulatycky: What was the purpose of the Coal Production Assistance Act?

Mr. MacNaught: The Coal Production Assistance Act was set up to permit the Government of Canada to make supervised loans to coal companies that needed assistance to modernize their mining procedures. Originally the mining of coal was a pretty crude business. They used a pick and shovel, and so on. Machinery was then developed but many of the mines did not have the capital to buy this machinery in order to modernize their mines. This Act was passed to permit the Board to make the loans and to supervise them, to investigate the necessity for them and to see if they were viable, and then to collect the payments under the loan.

Mr. Sulatycky: Why were the loans discontinued or the act repealed?

Mr. MacNaught: Again, we are getting into the realm of government policy. I believe government policy has changed. I am a public

servant and I cannot comment on government policy. Sometimes I forget that I am a public servant and I do comment, but if I do please forgive me. The government has decided to discontinue loans, and I cannot comment on why.

Mr. Sulatycky: Would the same reasoning apply to the discontinuance of the Canadian Coal Equality Act?

Mr. MacNaught: Not quite. The payments under the Canadian Coal Equality Act were mostly to the steel company in Sydney. When the Cape Breton coal mines were taken over by the Development Corporation the need for the 49½ cents paid under the Canadian Coal Equality Act disappeared, and there was only one other small recipient out on the West Coast and it was not of much significance.

Mr. Sulatycky: The Rocky Mountain coal is a bituminous coal, is it not?

Mr. MacNaught: Yes, and some of it is described as anthracite—although strictly under the proper definition of anthracite it might not qualify. However, the Japanese describe it as anthracite coal.

Mr. Sulatycky: Is it not suitable for conversion into coke?

Mr. MacNaught: Oh, very, very much so, yes.

Mr. Sulatycky: Why could not the Canadian Coal Equality Act be of some assistance to the mines in that area?

Mr. MacNaught: Because, you see, it was for the manufacture of coke in Canada. This is the manufacture of coke in Japan.

Mr. Sulatycky: Yes, I realize that, but why should that coal not be used to manufacture coke in Canada?

Mr. MacNaught: They did a little for Cominco Ltd.

Mr. Sulatycky: Would the act not enable the economic shipment of Western coal to markets in Central Canada for the production of coke so that the Western coke could then compete with American coal which is used for the manufacture.

Mr. MacNaught: The transportation costs and the cost of production would be too great. It would cost more to mine a ton of coal in the Rocky Mountains than it does in the area in the United States from which coal comes.

My Executive Director tells me the price is getting very close. But then we have the long haul from the mountains to Ontario.

Mr. Sulatycky: If the cost of mining is very close would not the 49½ cents per ton paid under the Canadian Coal Equality Act enable Western coal to be shipped here rather than importing American coal for conversion into coke here?

Mr. MacNaught: It would be an aid. However, I might point out that the Act has been in existence now for some years and no coal has moved for that purpose under it.

Mr. Sulatycky: Those are all the questions I had, Mr. Chairman.

Mr. Penner: Mr. Chairman and Mr. MacNaught, on occasion I have heard chemical engineers talking in a rather futuristic way about exciting new uses for coal which could have the effect some day of reviving the whole coal industry in Canada and throughout the world. Is any research being done in universities on new ways to use coal? Also, to what extent is research being done by the chemical industry itself in Canada, and to what extent if any does the chemical industry now utilize coal in some innovative way for the manufacture of synthetics and so on?

• 1015

Mr. MacNaught: I will ask Mr. Brown, who is a mining engineer and in charge of most of our research work, to answer.

Mr. A. Brown (Executive Director, Dominion Coal Board): First, you would like to know, what research is being conducted in the universities. This research on coal, as supported by the Board and by others in Canada, is conducted through a series of research centres across Canada—some of them are provincial research organizations and some are universities. Industrial studies on new uses of coal is very limited in Canada. It is much greater in the United States, from which we draw a lot of our information. There are some interesting new uses for coal but they are still in the development stage. We have an interesting study underway now at a university with the idea of using coal as a means for clarifying industrial wastes. Because one of the chief originators of industrial wastes are our pulp and paper industries and since they also are large consumers of fuel it seemed to be a natural one to push strongly. Coal, even after being used for a clarification

purpose, has not lost its calorific value and can be used for a fuel. This study holds prospects for an appreciable increase in the sale of coal, but again I would emphasize that it is in the advanced laboratory stage.

The present day use for coal, and for the foreseeable future, is for steam raising. In that I include the pulp and paper industries of Canada, the thermal electric industry of Canada—that is its biggest use, and metallurgy in Canada. The metallurgical industry has been growing because of the Japanese market, which is mostly metallurgical—and this applies to western Canada. Looking further ahead—and here the United States is leading the field—they are getting quite close in the United States to the stage where they can make synthetic liquid fuels and synthetic gaseous fuels from coal within the United States. A number of major research bodies in the United States are actively engaged in that now, and they are getting quite close to the production, say, of gasoline from natural petroleum. This is looking ahead because the United States visualize the beginning of a shortage of their own native oil and gas. Competitively, they are getting very close, and I would say they are in the advanced commercial size testings stage right now. The stage has been set for the appearance of synthetic fuels on the American market within, say, the next decade. This is something very, very new to them. The oil people are also interested and are asking what the chemical people are doing about coal. Well it is the chemical people in the oil and gas industries who are very advanced and very competent researchers. They are picking up coal and they are doing much of the really costly research. Practically all the major oil companies in the United States have taken an ownership position of some nature in the coal industry of the United States. They have been buying outright very large coal mining companies or buying mining rights, particularly through the mid-West. So this is looking ahead as a total energy concept. The idea of having oil people, gas people, coal people and uranium people all in nice compartments is rapidly going and it will be a total energy picture. So much of the really aggressive and costly research on coal is being done by the chemists of the oil industry in the United States.

The Chairman: I have on my list now Messrs Hymmen, Watson, Lind and Harding. Mr. Hymmen, you may proceed.

Mr. Hymmen: I will carry on from where Mr. Brown left off. I was just going to ask if there is any research or any consideration being carried on in Germany, for example, which has considerable resources in coal in this liquid or gaseous fuel situation?

Mr. MacNaught: I have been instructed that during the war years German industry manufactured most of their gasoline requirements from coal at a pretty high price, but nevertheless they did it. What is being done at the present time, I do not know, but I know that they are carrying out intensive experiments.

Mr. Hymmen: I have a couple more general questions. Under vote 75, if we exclude the statutory payments, I notice there is a considerable reduction in the budget amount from 1967-68 to 1968-69. Was the work culminating in the Donald Report under your Board or under another agency?

Mr. MacNaught: Are you referring to the reduction in the amount of subvention?

Mr. Hymmen: Yes.

Mr. MacNaught: That was brought about as a result of the Cape Breton Development Corporation. It is no longer necessary for the Board to pay subvention to mines in Nova Scotia.

Mr. Hymmen: This is under administrative—there are no subvention fees in the administrative section.

Mr. MacNaught: Oh, I am sorry.

Mr. Hymmen: It is a reduction from some \$200,000 to \$150,000.

Mr. MacNaught: You will notice that the research funds have been reduced. Staff has dropped in numbers and other functions of the Board as a result of the Cape Breton Development Corporation being set up have disappeared and that is basically the reason for the drop in the administration.

Mr. Hymmen: No, but my direct question before was whether your Board authorized the Donald Report.

Mr. MacNaught: The Donald Report was authorized by the Government of Canada.

Mr. Hymmen: I have another question under research. Almost every speaker has mentioned sulphur and I think, Mr. MacNaught, you or Mr. Brown mentioned that the

interest in reduction of sulphur was in order to make a coal or a coke which was acceptable to the steel processing industry and that the sulphur could be reduced to 1 per cent. I suggest there is another reason for reducing the sulphur content. While the domestic use has been dropping, the industrial use is increasing and also the thermo-electric use has been increasing and, in the question of air pollution, two of the most difficult constituents in the air of course are sulphur dioxide and sulphur trioxide.

My question, and I am very much interested in the research that is being carried on, is what is the optimum reduction that can be carried out in the reduction of sulphur? This might apply to oil as well, because I am not familiar with the percentage of sulphur in oil, but any waste product going into the atmosphere in large quantities is causing a present and it will be a future problem in regard to sulphur gases.

Mr. MacNaught: Mr. Chairman, it is purely a matter of economics. The sulphur content can be reduced to zero, if necessary, but that is expensive. There comes a point where the law of diminishing returns starts to apply. We have found that 1 per cent is about where the break starts.

Mr. Hymmen: But it can be reduced?

Mr. MacNaught: Oh, it can be reduced to zero.

• 1025

Mr. Hymmen: I have a question concerning the Canadian Coal Equality Act. Just to correct something here, the payments under this Act appear to be reducing year by year. Is that due to the unavailability of proper low-sulphur Canadian coal from a source close to the Hamilton steel operations in order to make this satisfactory coke?

Mr. MacNaught: Yes, that is basically correct. At one time it was possible to use 700,000 tons of Sydney coal to make coke for the steel works down there, but with richer ore and a greater demand for a better product, it became necessary to get a lower sulphur coal which could be obtained only from the United States. The result was that from 700,000 or 800,000 tons it eventually dropped to 100,000 tons. There is no payment on coal coming from the United States; only on coal mined in Canada to be used in the production of steel in Canada.

Mr. Hymmen: No, but if the sulphur reduction process could be introduced there is no reason why this coal could not be used, the payments would be made and we would be using that much more Canadian coal instead of American coal.

Mr. MacNaught: I think what you are saying is correct; it will be possible to get that market back but since the mines are now owned by the Cape Breton Development Corporation which is a creature of the federal government and the provincial government of Nova Scotia, it will be no longer necessary to make those payments.

Mr. Hymmen: Thank you.

The Chairman: Mr. Watson?

Mr. Watson: Mr. MacNaught, you mentioned that some research had been dropped in the last year. What research has been dropped? Your expenditures have gone down.

Mr. MacNaught: No particular project has been dropped, but enough research money has not been made available to us to start new research programs.

Mr. Watson: Is there any liaison between the Dominion Coal Board and the National Research Council so far as research possibilities and projects are concerned? Do you people consult them and ask them to do things for you?

Mr. Brown: Yes; in all the research work supported by the Board, a liaison is maintained with all other people in Canada and elsewhere engaged in coal research. For example, we work through a body called the Canadian Advisory Committee on Coal Research.

With respect to the National Research Council, to my knowledge they have not been emphasizing coal studies. These have been centred more within the Mines Branch in Ottawa. They have a very active group. We do co-ordinate very closely with them and support them. The other research centres where work is going on are the Nova Scotia Research Foundation, the Saskatchewan Research Council, the Alberta Research Council and the University of Waterloo.

As you have noted, there has been a reduction in allocation for research from \$75,000 to \$50,000. This reflects more than anything else a general economy effort made last year affecting not only coal, but everything.

Mr. Watson: Did you people, Mr. MacNaught, play a role in the development of the export market from Alberta to Japan, or was this done by private industry and then you were simply informed of the results?

Mr. MacNaught: In the beginning the Diminution Coal Board stimulated the investigations; sponsored groups to go from Canada to Japan to talk with the Japanese people and generally was responsible for the first contracts, for the short-term contracts and...

• 1030

Mr. Watson: In what way were you responsible?

Mr. MacNaught: By taking the exports from Canada to Japan, being in charge of the developments and the meetings in Japan and generally keeping abreast of the situation as it went on and making subvention available to the companies so that they could produce coal while the market was developing.

Mr. Watson: You people then can claim responsibility, can you, for putting our western coal interests in contact with the Japanese purchasers?

Mr. MacNaught: What you are stating is reasonably correct.

Mr. Watson: How many men are working in the coal mines of Nova Scotia and New Brunswick now?

Mr. MacNaught: The latest figure we have indicates about 5,800 men in Nova Scotia, that is, in the Sydney area and a couple of mines on the mainland. In New Brunswick there are probably 600 to 700 men.

Mr. Watson: The subventions for Nova Scotia amount to approximately \$33 million?

Mr. MacNaught: In Nova Scotia, \$27 million.

Mr. Watson: What does that work out to per coal miner?

Mr. MacNaught: I have never worked it out on that basis. Around \$5,000, for each coal miner.

Mr. Watson: Around \$5,000 per man?

Mr. MacNaught: Yes.

Mr. Watson: What percentage of the Nova Scotia coal production has been taken over by this Cape Breton Development Corporation?

Mr. MacNaught: Between 80 and 90 per cent.

Mr. Watson: Is it not true that the Dominion Coal Board was set up in the first place to deal with the Maritime coal situation, or was this not the primary aim?

Mr. MacNaught: No, I would not say particularly with the Maritime situation. I think it was set up to deal with the total coal problem of Canada.

Mr. Watson: To your knowledge, are there any additional plans to phase out coal production in Nova Scotia? You mentioned you thought that over a period they would be reduced.

Mr. MacNaught: What I meant was that the production from the four large mines now owned and operated by the Cape Breton Development Corporation—and this, I believe, is in the report tabled in the House of Commons last week—will eventually be phased down to somewhere between two million and 2½ million tons a year.

There remain in Nova Scotia four mines, what we call independent mines. One is at Broughton, near Glace Bay, owned by the Bras d'Or Coal Company Limited, and called the Four Star Collieries Limited. It produces 100,000 to 120,000 tons of coal a year. There is a mine at Springhill, and there is one at River Hebert, Pictou County. There is the Drummond Mine at Stellarton. And up in Inverness County there is still one in existence, I believe, known as the Evans Mine. But their production individually is only 40,000 to 50,000 tons a year, and whether they will reduce or not, I do not know. Probably they will.

• 1035

Mr. Watson: Are decisions by the Dominion Coal Board to spend money approved elsewhere? Can you people decide on your own to spend money, or do you make recommendations which are studied by other areas of government and finally approved?

Mr. MacNaught: All decisions made by the Dominion Coal Board are decisions recommended to our Minister. At present we are under the Minister of Energy, Mines and Resources, and in theory everything we do is done by the Minister. In certain areas we have wide jurisdiction; in other areas we are limited and certainly would not think of doing anything without having complete government approval.

Mr. Watson: Does the initiative, for example, for these subventions come from you people or from the mines division of the Department of Energy, Mines and Resources.

Mr. MacNaught: They come from the Coal Board. We make the recommendation to the government. The government then decides whether the recommendation is sound.

Mr. Watson: Do these subventions result in lower prices to the Canadian consumer in central Canada, than these consumers would be faced with if they purchased their coal directly from the United States? Is there any saving to the Canadian coal consumer? As a result of these subventions, is there any saving in comparison with United States prices?

Mr. MacNaught: We equate a ton of Canadian coal with a ton of American coal, and we pay the difference. The subvention is the difference between what it costs to produce a ton of Canadian coal, to move it to the area and put it in the bin, or wherever it is used, and what it costs to put an American ton of coal there. If there is a difference, that is the subvention.

Mr. Watson: In effect, this \$27 million that we are paying in Nova Scotia as a subvention is a direct subsidy. It is a direct transfer payment to the coal miners.

Mr. MacNaught: To the miners, indirectly. It is a social problem.

The Chairman: Mr. Lind.

Mr. Lind: Is it true that Ontario uses a great deal of Nova Scotia coal in generating electricity in power plants?

Mr. MacNaught: The power plant of Ontario uses three-quarters of a million tons of Sydney coal every year for the generation of electricity.

Mr. Lind: You mentioned a while ago that oil was landed at Halifax very cheaply. How does Nova Scotia generate its power? Do they use oil or coal?

Mr. MacNaught: Mainly coal.

Mr. Lind: Are there any of them using oil in generation of electricity?

Mr. MacNaught: Yes.

Mr. Lind: What percentage would be using oil?

Mr. MacNaught: About 40 per cent to 50 per cent are using oil.

Mr. Lind: So, then it would not be mainly coal; it would be about half and half.

Mr. MacNaught: Half and half.

Mr. Lind: Do you not think that the Government of Nova Scotia, in the interests of the coal mines, would use all coal in the generation of electricity?

Mr. MacNaught: If I expressed a thought on that point it might be regarded as political. I do not want to appear to be criticizing the Government of Nova Scotia, or the Government of Canada. So you must excuse me from answering that question.

Mr. Lind: Would not the Cape Breton coal industry be pushing the Province of Nova Scotia to use coal rather than oil?

Mr. MacNaught: I can answer that. I am sure they will endeavour to get the Government of Nova Scotia to use as much coal in the power plants that they control as it is possible to use.

Mr. Lind: This would cut down our imports of oil and increase home consumption of the product of our Cape Breton mines?

• 1040

Mr. MacNaught: That would be the net result.

The Chairman: Mr. Harding.

Mr. Harding: There are one or two questions I would like to ask, particularly about the coal situation in British Columbia. The first question, does the Coal Board get involved in any of the transportation costs of coal?

Mr. MacNaught: In an advisory capacity, yes.

Mr. Harding: I assume the cost of carrying coal is one of the major factors in the end cost. I imagine you would not be in on that.

Mr. MacNaught: There is no doubt on that point, Mr. Harding.

Mr. Harding: To whom do these subventions go? Do they go to the producer or to the carrier?

Mr. MacNaught: In British Columbia and Alberta the subventions go to the three mines

that are being subvented; that is, Coleman Collieries Limited, the Canmore Mines Limited and Kaiser Coal.

Mr. Harding: Is there an agreement between the Dominion Coal Board and Kaiser Coal Canada Limited at Fernie, or any of the Japanese interests, about the coal that is going to be exported within the next year or two when the contract is entered into?

Mr. MacNaught: The long-term contract with Kaiser, which formerly was Crows Nest, starts in 1970. That is now a contract, of course, between Kaiser and a steel importing company, or a coal importing company, in Japan. We have a copy of the contract in our files.

Mr. Harding: What are the terms of the contract relative to subventions?

Mr. MacNaught: That contract will be carried out without one cent of subvention. That has been the end result of the work of the Coal Board over the years, which was to get these mines in a position in which they could produce coal without a subvention.

The fact that The Crow's Nest Pass Coal Co., Limited, or Kaiser, which took over Crow's Nest, were able to negotiate a contract with Japan for roughly 45 million tons of coal—3 million tons a year for 15 years—without subvention is proof that our efforts have been successful.

Mr. Harding: There are two other firms—

Mr. MacNaught: Canmore and Coleman.

Mr. Harding: They are on the Alberta side, really?

Mr. MacNaught: Yes; Coleman Collieries Limited and Canmore Mines Limited are on the Alberta side.

Mr. Harding: What subventions are paid to these companies on shipments?

Mr. MacNaught: Coleman will be getting subventions until 1971. They entered into their contract earlier than Kaiser and the freight rates at that time were much higher than they will be later on. It was necessary to subvent Coleman in the beginning of their contract until the freight rates would be reduced to an amount at which they could ship the coal to Japan without the need of a subvention.

Mr. Harding: I presume the freight rates are based on the quantities shipped. Is that right?

Mr. MacNaught: There is an agreement with CPR that at a certain date, when production reaches a certain figure, the rates will be drastically reduced; and then they will all be able to ship without subvention.

Mr. Harding: What were the rates of subvention? I missed them.

Mr. MacNaught: I do not know whether I gave them to you, but they are from around \$2.73 a ton and on a decreasing basis.

The rates per ton for all years involved: Canmore in 1970 to 1971 will be down to \$1.85; Coleman \$2.19; and Crow's Nest will be getting none. For the year 1969 to 1970, Canmore \$2.20; Coleman \$2.44; and Crow's Nest \$2.36; in 1968-69 it is Canmore \$2.55; Coleman \$2.73; and Crow's Nest \$2.73. You will note that there is a progressive reduction over the next few years to zero, which has been the aim of the Coal Board for some time.

• 1045

Mr. Harding: I do not think you gave us the quantities of coal that were to be shipped to Japan by Kaiser.

Mr. MacNaught: By Kaiser, 45 million tons.

Mr. Harding: That is the total contract. I am thinking of the yearly amount.

Mr. MacNaught: Three million tons a year.

Mr. Harding: Three million tons.

Mr. MacNaught: For 15 years; that is the big one starting in 1970.

Mr. Harding: I have just one more question, Mr. Chairman, to which I am not sure Mr. MacNaught will have an answer.

Does the Dominion Coal Board have any agreement with the National Harbours Board on the shipping of this coal?

Mr. MacNaught: No, the Dominion Coal Board would have no agreement with the National Harbours Board. Of course, we do know the rates and all those things; but we have no agreement.

Mr. Harding: Yes, I see.

Mr. MacNaught: The companies, very definitely, have agreements with CPR and with the dock facilities at Port Moody for the export of coal.

Mr. Harding: I have one further question on the transport price of coal. This is a set price, I presume, from the mine to tidewater?

Mr. MacNaught: Yes; that is basically correct.

Mr. Harding: Probably I should also mention, while I am on it, that there is talk of the B.C. Government building a line from Robert's Bank to hook up with the Canadian National Railway in B.C. Is this likely to affect the cost of transporting coal from the pithead?

Mr. MacNaught: I think not.

Mr. Harding: Then if a price of coal transport were negotiated it would include the trip right through?

Mr. MacNaught: That is right. There will be a reduction of about \$2.00 a ton in about two year's time.

The Chairman: Mr. Gilbert?

Mr. Gilbert: Mr. Chairman, nearly all the questions have been asked, but I would like to direct one, probably to the financial officers, about the subventions.

I notice that the subventions are increasing in the cost per ton. In 1967-68 it amounted to \$6.26 per ton. Is there any particular reason for that? Is it because of an increase in cost of production or is it because of the difference in the costs of an American ton and a Canadian ton?

Mr. MacNaught: The reason for it is the increase in the cost of production. Materials have increased and labour has increased; consequently, the cost of producing a ton of coal has gone up.

Mr. Gilbert: There is no increase in efficiency?

Mr. MacNaught: There has been some increase in efficiency; there is no doubt on that point. But not sufficient to make a significant reduction in cost; in fact it has been the other way.

Mr. Gilbert: You talk about giving loans to companies to modernize their production machinery. This policy has now been discontinued; is that right?

Mr. MacNaught: Yes, that is correct; no new loans.

Mr. Gilbert: Are the Maritimes companies to whom the subventions are paid Canadian companies or American companies?

Mr. MacNaught: In the Maritimes all the companies are Canadian companies. There are very few left to which we will be paying subventions. They are small and are nearly all owned by one or two local individuals. That is about the size of it.

• 1050

Mr. Gilbert: What is the position in Alberta and British Columbia?

Mr. MacNaught: So far as I know, Coleman Collieries Limited is of Canadian ownership. Francis J. Harquail owns it; I am pretty sure of that. Your guess on who owns Kaiser Coal Canada Limited is as good as mine. I am told that its ownership is 75 per cent American and about 25 per cent Canadian. The Canmore Mines Limited, I presume, is about the same. I do not really know. I have no way of knowing that, expect what I am told.

Mr. Gilbert: I think that is all, Mr. Chairman.

The Chairman: Mr. Grills, you are next.

Mr. Grills: I was interested in Mr. Lind's question about power generation in Nova Scotia. Who controls the power generating plants, is it government or private corporations?

Mr. MacNaught: Both, I think. The Government of Nova Scotia controls one and the other large one is controlled by private industry. Nova Scotia Light and Power Company Limited is owned by private industry.

Mr. Grills: Do you know whether the government-operated plant uses coal or oil?

Mr. MacNaught: It uses coal.

Mr. Grills: That clarifies it. I am sure Mr. Lind would not want to leave any political insinuations on the record in respect of any province, knowing him as I do. I just wanted to make it clear.

Mr. Lind: I want to thank you very much. I am glad you cleared that point up because we hear so much about Cape Breton coal.

The Chairman: That is all I have on the first round. I believe Mr. Comeau indicated that he would like to put a couple more questions.

Mr. Comeau: Mr. Chairman, will the \$27 million expenditure for the year 1967-1968 decrease now because of the Devco Corporation?

Mr. MacNaught: Yes, it will decrease. To this year our estimate is \$8.5 million.

Mr. Comeau: It will decrease to about \$8.5 million?

Mr. MacNaught: That is correct.

An hon. Member: That would be for the over-all coal?

Mr. MacNaught: That is right, yes. You meant for the over-all picture in Canada, Mr. Comeau?

Mr. Comeau: No, I am talking about Nova Scotia.

Mr. MacNaught: There would be no subvention paid by the Dominion Coal Board to Nova Scotia in the future. It ceased on April 1, 1968 with the exception of some adjustments that we had to make. We pay an advance payment on a ton of coal and later we have to adjust it when we get the total costs of production for the year. Apart from that there is no further subvention to be paid to any coal produced in Nova Scotia.

Mr. Comeau: But what is the reason for this, Mr. Chairman. Is it that the Devco Corporation is going to operate on a profitable basis, or is it simply that the mines have decreased?

Mr. MacNaught: All I know, Mr. Chairman, is that an agreement was entered into between the Government of Nova Scotia and the Government of Canada whereby a corporation was set up to procure and operate the four mainland mines—formerly the property of the Dominion Coal Company Ltd. which was a subsidiary of Dosco. When Devco assumed the ownership and operation, subventions ceased and Nova Scotia assumed responsibility for keeping the independent mines in operation. A short while ago I named those four mines, and Nova Scotia has assumed the responsibility of keeping them in operation.

Whether or not Devco will operate the mines on a profitable basis, I do not know but I certainly hope so.

Mr. Comeau: You have no idea whether some other agency is going to have to subsidize these mines? It is puzzling to me that in 1967-68 there was supposed to be \$27 million

in subventions but that the next year there is none. Somebody must be paying this.

• 1055

Mr. MacNaught: If Devco has a deficit I presume it would be handled the same way as a deficit of any other Crown corporation is handled a deficit of the CNR for example, or other Crown corporations.

Mr. Comeau: You mentioned a subvention figure of approximately \$5,000 per miner a while back.

Mr. McNaught: Somebody did the arithmetic for me. They took the amount of subvention, the number of miners operating the mines, they divided one into the other and they came up with I think \$5,000 I have never done the arithmetic on it, but it seems about right.

Mr. Harding: I think \$4,400 is a little bit closer.

Mr. MacNaught: \$4,400, all right.

Mr. Comeau: I do not know what to think about that. Do you know what the approximate average wage of the miner would be?

Mr. MacNaught: I am told about \$5,500.

Mr. Comeau: So really the mine is only paying him \$500 for his work. You could give him \$5,000 without him ever working and he would live about the same way. I'm puzzled Mr. Chairman. That is all.

The Chairman: Mr. Grills?

Mr. Grills: Is there considerable Nova Scotia coal used in our power generating plants in Ontario??

Mr. MacNaught: About five and a half million tons of American coal is used for the generating or electricity in the province of Ontario.

Mr. Grills: What about Nova Scotia coal?

Mr. MacNaught: About 750,000 tons is brought up by ship from Sydney to the Toronto area.

Mr. Grills: Thank you.

Mr. Harding: I have another question, Mr. Chairman.

Do you have the figure that Kaiser Coal Canada Limited paid Crows Nest Pass Coal Co. Limited for the coal reserves which they bought from them?

Mr. MacNaught: No.

Mr. Harding: I know it was a tremendous sum—many, many millions of dollars. It has always seemed very odd to me that we have to subsidize the mining of coal but when the capital asset is sold there is no way of getting any of it back. There is no recapture at all from the Crows' Nest Pass Coal Co. Limited who received both the subvention and a tremendous sum of money on the sale of the coal which they had. I do not have the figures with me and I do not like to give them in the event I have the wrong ones.

Mr. Gilbert: How many coal miners do we have in Canada?

Mr. MacNaught: 8,200.

Mr. Gilbert: And if you divide 8,200 into \$33 million it is roughly \$4,000 subvention per person, is it not?

Mr. McNaught: That is right.

Mr. Gilbert: Do we have trouble getting coal miners these days? We had the maiden speech of one of the members of our Committee last night and he said that they are having difficulty getting coal miners in Alberta.

Mr. MacNaught: I would not be surprised if that is a correct statement. There will be new mines opening and there will be difficulty in getting competent miners.

Items 75 and 80 agreed to.

The Chairman: I would like to thank the Hon. Mr. MacNaught and his officials for being with us this morning.

Mr. MacNaught: I was very glad to be here.

The Chairman: We will meet again eight o'clock on Tuesday evening.

OFFICIAL REPORT OF MINUTES
OF
PROCEEDINGS AND EVIDENCE

This edition contains the English deliberations and/or a translation into English of the French.

Copies and complete sets are available to the public by subscription to the Queen's Printer. Cost varies according to Committees.

Translations under the direction of the Bureau for Translations, Secretary of State.

ALISTAIR FRASER,
The Clerk of the House.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament
1968

STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE
No. 9

TUESDAY, NOVEMBER 26, 1968

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources

WITNESSES:

Dr. G. C. Laurence, President, Atomic Energy Control Board; and
Mr. J. L. Gray, President, Atomic Energy of Canada Limited.

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

Badanai
Beaudoin
*Chappell
Code
Comeau
Crossman
*Deakon

Gilbert
Grills
Harding
Lind
Marchand (*Kamloops-
Cariboo*)

Moores (*Bonavista-
Trinity-Conception*)
Penner
Ricard
Ritchie
Roy (*Timmins*)
Sulatycky—(20).

Quorum 11

J. H. Bennett,
Clerk of the Committee.

* Replaced Mr. Watson on November 26, 1968.

* Replaced Mr. Roberts on November 26, 1968.

ORDER OF REFERENCE

HOUSE OF COMMONS

TUESDAY, November 26, 1968.

Ordered,—That the names of Messrs. Deakon and Chappell be substituted for those of Messrs. Watson and Roberts on the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER,
The Clerk of the House of Commons.

(Text)

MINUTES OF PROCEEDINGS

TUESDAY, November 26, 1968.

(9)

The Standing Committee on National Resources and Public Works met this day at 8:15 p.m. The Chairman, Mr. Hopkins, presided.

Members present: Messrs. Badanai, Beaudoin, Chappell, Comeau, Crossman, Deakon, Harding, Hopkins, Hymmen, Lind, Moores (*Bonavista-Trinity-Conception*) Marchand (*Kamloops-Cariboo*), Ritchie, Roy (*Timmins*), Sulatycky (15).

Also present: Mr. Paproski.

In attendance: Dr. G. C. Laurence, President, Atomic Energy Control Board; and Mr. J. L. Gray, President, Atomic Energy of Canada Limited and associates.

The Chairman called Items 55 and 60 of the Revised Estimates relating to the Atomic Energy Control Board and Items 65, 70; L5, L10, L15 and L20 relating to Atomic Energy of Canada Limited.

The Chairman introduced Dr. G. C. Laurence and Mr. J. L. Gray who introduced their associates.

Dr. Laurence and Mr. Gray addressed the Committee on the functions of the Atomic Energy Control Board and Atomic Energy of Canada Limited, and were examined by the Committee.

It was agreed that a graph, shown by Mr. Gray, be filed with the Clerk of the Committee as *EXHIBIT A*.

The Committee agreed to continue questioning at the next meeting on Thursday, November 28, 1968.

At 9:50 p.m., the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, November 26, 1968.

The Chairman: Gentlemen, I see a quorum and I call the meeting to order.

As previously agreed I shall now call items 55 and 60 on page 70 relating to the Atomic Energy Control Board and Items 65 and 70 on page 70 relating to the Atomic Energy of Canada Limited (Research Program).

Department of Energy, Mines and Resources

B—Atomic Energy Control Board

55 Administration Expenses of the Atomic Energy Control Board, . . . \$392,000

60 Grants for researches and investigations with respect to atomic energy. . . \$3,920,000

C—Atomic Energy of Canada Limited
(Research Program)

65 Current Operation and Maintenance, including expendable research equipment, . . . \$58,919,000

70 Construction or Acquisition of Buildings, Works, Land and Equipment. . . \$9,681,000

The Chairman: Please turn to page 576 of the Blue Book, because we also have Items L5 . . .

An hon. Member: One minute, Mr. Chairman.

The Chairman: It is on page 576; Items L5, L10, L15 and L20 relating to Atomic Energy of Canada Limited.

ENERGY, MINES AND RESOURCES

Atomic Energy of Canada Limited

L5 Loans in the current and subsequent fiscal years to Atomic Energy of Canada Limited, in such amounts and on such terms and conditions as the Governor in Council may approve, to finance the construction of the Candu-BLW 250 nuclear power station in Quebec; to share in the construction of the Pickering Generating Station under agreement between the Federal Gov-

ernment, the Province of Ontario and the Hydro Electric Power Commission of Ontario; to finance the construction of manufacturing facilities and a laboratory for the Commercial Products Division at South March; to finance the construction of housing and other works near the Whiteshell Nuclear Research Establishment. . . . 51,000,000

L10 Loans to Atomic Energy of Canada Limited in the current and subsequent fiscal years, in such amounts and on such terms and conditions as the Governor in Council may approve, to finance the purchase of Canadian-produced Heavy Water for resale to Canadian and foreign users. . . 4,600,000

L15 Loans to Atomic Energy of Canada Limited in the current and subsequent fiscal years, in such amounts and on such terms and conditions as the Governor in Council may approve, to finance the construction of transmission facilities in connection with the Nelson River Power Project, in accordance with an agreement between Canada and Manitoba; to authorize Atomic Energy of Canada Limited to construct, control, lease and dispose of the said transmission facilities. . . 40,000,000

L20 Loans to Atomic Energy of Canada Limited, subject to such terms and conditions as the Governor in Council may approve, to make an advance payment to Deuterium of Canada Limited based on the value of one year's production by that Corporation of heavy water. . . 16,400,000

Total \$112,000,000

The Chairman: I will now invite the representatives of these branches to introduce their associates. First of all I would like to introduce Dr. G. C. Laurence, President of the Atomic Energy Control Board and I ask him to introduce his officials at this time.

Dr. G. C. Laurence (President, Atomic Energy Control Board): Mr. Chairman may I present Dr. Dewar who is on my right. He is the Chief Scientific Adviser on the staff of the Atomic Energy Control Board. Second on my right is Mr. E. M. Nolan, who is the Senior Administrative Officer of the Board.

The Chairman: Thank you, Dr. Laurence. Second, I would like to introduce Mr. J. L. Gray, President, Atomic Energy of Canada Limited and I ask Mr. Gray to introduce his officials.

Mr. J. L. Gray (President, Atomic Energy of Canada Limited): Mr. Chairman on my right is Mr. G. H. Sprague, Treasurer of Atomic Energy of Canada Limited and on his right is Mr. D. Watson, Vice-President of Administration, Atomic Energy of Canada Limited.

The Chairman: Thank you, Mr. Gray. Next I will call upon Dr. Laurence to give a brief resume of the purpose and function of his Board before questioning commences.

Dr. Laurence: Thank you, Mr. Chairman. The Atomic Energy Control Board is, as you know, the regulatory body which is engaged in matters concerning all atomic energy activities in Canada. If I may refer directly to the votes, Votes 55 and 60 concern the expenses of the Atomic Energy Control Board, the Canadian regulatory authority which was set up, as I mentioned, in 1946 to control dealings in atomic energy materials and equipment.

• 2015

At first the Board's control powers were exercised primarily in the interests of national security. Later, at the request of the federal and provincial health departments, these powers were also used in the interests of health and safety. Vote 55 is to provide for the administrative expenses of a permanent staff of 31 employees of which at present there are now 29, and two advisory committees, the Reactor Safety Advisory Committee and the Accelerator Safety Advisory Committee, which assist the Board in its control activities.

In radiation safety matters the Board relies primarily on the advice and inspection facilities of federal and provincial health departments. However, it has found it necessary to provide specialist inspection officers in the field of reactor safety, accelerator safety, transportation of radioactive materials and

operations involving enriched uranium or plutonium.

In the security field, the Board also provides specialist inspectors to ensure compliance with Canadian policy that atomic energy materials and equipment of Canadian origin are used for peaceful purposes only. As an example of the Board's activities in these fields, particular mention might be made of one, the licensing system for atomic energy materials which is designed to check that applicants have adequate training and facilities to use the requested materials properly and that their operations are unlikely to cause a health and safety hazard.

The second example is the supervision of safety aspects of reactors outside government departments during design, construction, commissioning and operation, and also the examination of the qualifications of proposed operators for these facilities. This requires the close attention of the Board's officers and the assignment of a resident inspector during the commissioning stage.

The third example is the participation by Board officers in drafting the standards of the International Atomic Energy Agency, which is a UN organization, for safeguard inspection to ensure that atomic energy operations are not directed towards military purposes. The Board's safeguard officers also inspect Canadian and foreign operations using Canadian atomic energy materials and equipment to ensure that they are used for peaceful purposes only.

Coming, then, to Vote 60, the Board, as authorized by the Atomic Energy Control Act, has since its establishment assisted 11 Canadian universities to purchase and operate major items of atomic energy equipment and to enable them to carry out research and to train scientists and engineers needed for future atomic energy operations in this country. Vote 60 is intended to continue this support.

In this connection, Mr. Chairman, particular mention should be made of TRIUMF which is an abbreviation for tri-university meson facility, a project which was commenced with government approval earlier this year. This project which now involves the joint participation of four universities, the University of Alberta, the University of British Columbia, Simon Fraser University and the University of Victoria, involves the design, construction and operation of a 500 electron volt proton spiral ridge cyclotron for

use as a research tool in the developing field of intermediate energy nuclear physics.

Further information on the activities of the Atomic Energy Control Board is contained in the Board's annual report for 1967-68. Copies of this report are available for distribution to hon. members if desired. We have also made available, Mr. Chairman, copies of the brief that was presented within the last fortnight to the Special Committee on Science Policy of the Senate of Canada because the first part of this brief tells in a little more detail, which might interest hon. members of your Committee, the functions of the Board.

• 2020

The Chairman: Thank you, Dr. Laurence. I will now call upon Mr. Gray to give a brief résumé of the purpose and function of Atomic Energy of Canada Limited.

Mr. Gray: Mr. Chairman and gentlemen. Atomic Energy of Canada Limited is a Crown company that has three main functions: research and development in the field of nuclear energy; the development of economic nuclear power, and the production and marketing of radioactive isotopes and equipment for isotope applications. In addition, AECL has lately been designated as Canada's nuclear power marketing organization and has begun a vigorous marketing campaign extended to several parts of the world.

In the performance of its role, AECL operates laboratories for fundamental and applied research and engineering development; designs and builds nuclear power stations in co-operation with industry and utilities, and offers to supply nuclear power stations on the international market; provides nuclear consulting services as required; enters into research and development contracts with industry and the universities in the field of nuclear energy; makes available its special facilities and expertise to assist industry and utilities in putting nuclear energy into practical use and assists universities in nuclear studies. We also produce and market radioactive isotopes for use in medicine, industry, agriculture and research generally, and we design, manufacture and market equipment to use radioisotopes.

Our main research and development centres are the Chalk River Nuclear Laboratories at Chalk River, Ontario, and the Whiteshell Nuclear Research Establishment at Pinawa in Manitoba, about 60 miles northeast of Winnipeg. The work done at Chalk River and the

newer establishment at Whiteshell has earned for Canada a recognition as one of the world's leaders in the development of the peaceful uses of atomic energy.

At Sheridan Park just outside Toronto we have a Power Projects group with responsibility for nuclear power system design, nuclear engineering consulting services, development and testing of major equipment for nuclear power plants and project management of certain nuclear power stations. We have a Commercial Products group here in Ottawa with the main location now at South March but with a laboratory still at Tunney's Pasture. This group handles the processing and marketing of radioactive isotopes and the development, design, manufacture and sale of equipment to handle isotopes.

In Ottawa we have a relatively small head office organization. In Winnipeg we have a very small office charged with the management responsibility of the Nelson River transmission line project and in Montreal we have another very small office managing the construction of a nuclear power station near Trois Rivières called Gentilly.

Most of AECL's efforts have been directed towards the development of a nuclear power system that will meet both near and long-term Canadian needs for low cost energy. The nuclear power program launched less than 50 years ago is now at a point where large commercial stations are being built in Canada to produce economic power and similar stations are being offered in the world markets in competition with other nuclear plants and other forms of energy production.

All told there are six nuclear power stations of Canadian design either in operation or under construction—four are in Canada, one is in India and one is in Pakistan. Their total design capacity is in excess of 3 million kilowatts and they represent a total investment of more than \$900 million.

• 2025

Ontario Hydro which is currently building the 2 million kilowatt Pickering station near Toronto has indicated that it expects to announce before the end of the year a commitment for a new station with an output of 3 million kilowatts. To give some idea of size, the Pickering unit which is under way will have a capacity equal to that of all the hydro installations on the Ottawa River.

It is important to remember that it is the utilities that have the ultimate responsibility

for building and operating nuclear power stations on a commercial scale. This has happened in Ontario where Ontario Hydro has embarked on a nuclear power program that is large by any standard. It will happen elsewhere in Canada in the near and more distant future.

The role of AECL has been to develop in the national interest a nuclear power system that is economic and reliable and is best suited to Canadian conditions and circumstances. This has entailed research and development utilizing the unique and extensive facilities of our laboratories right through to construction of prototype stations. Continued research by AECL is necessary to realize potential improvements in the present line of reactors and to develop new and advanced systems that will be competitive with those on which other countries are now working.

Overseas, AECL is planning to bid, along with other competitors, on two plants, one in Roumania and another in Italy. Several other countries are actively interested in the Canadian system and have entered into discussions with us. Of some significance in the international sphere was the agreement signed by AECL in October with our French counterpart, Commissariat à l'Energie Atomique, to exchange technical information relating to nuclear power reactors moderated by heavy water. This indicates that the French, who have a nuclear program many times larger than we have in Canada, and who have been concentrating on a different nuclear power system, are now keenly interested in the heavy water and natural uranium fuel system that we have developed in Canada.

In the radioisotope field, AECL is a major world supplier of Cobalt 60 and is a leader in the design, manufacture and supply of equipment for the application of radioisotopes and other sources of radiation. The best known product is the teletherapy machine for the treatment of cancer. At the present time there are more than 650 cobalt beam therapy units, produced by our Commercial Products group, in operation in 52 countries. The same Group has produced 219 industrial radiators that are being used in 35 countries. More than 90 per cent of the sales of commercial products are in the export market and the revenues for the current year are expected to be about \$10 million.

Members of the Committee, Mr. Chairman, you have available the annual report of AECL, and I should like to draw to your

attention the Proceedings of the Standing Committee on Science Policy of the Senate, Report No. 5, which tells in quite considerable detail many of the operations of AECL.

The Chairman: Thank you, Mr. Gray. Having called Items 55, 60, 65, 70 and L5, L10, L15 and L20, I now recognize Mr. Badanai as the first questioner.

• 2030

Mr. Badanai: Thank you, Mr. Chairman. I presume that the Atomic Energy Control Board is primarily concerned with the manufacture and sales of nuclear power stations and reactors. I wish to direct my question to Mr. Gray. I understand that the corporation has been very successful in marketing these nuclear power stations and reactors. My question is how much uranium is required for the manufacture of one of these stations?

Mr. Gray: First of all, perhaps I should correct an impression. We have been very successful in the manufacture and sale of equipment to handle radioisotopes. We expect to be very successful in the sale of nuclear power stations but we have just entered this field of work as of July of this year. We are just putting in our first bid to Romania. This will be decided in the next three, four or five months, and we hope to be successful.

We think we have a good product to offer but in the export market, we have not had any time either to be good or bad. In the Canadian market the same Canadian type of system, of course, is being applied to a very large extent and especially in Ontario Hydro.

However, to answer your question, how much uranium is required, the main merit of our particular type of plant is that it burns less uranium by a half or one-third than any other type of nuclear power station. This has great advantages for the power producer and the power user. It may appear to have disadvantages to the uranium producers in the early stages, but we do not think it will have in the long pull.

Something like 100 tons of uranium are required to get one of our large plants started and then, depending upon the size, it may be 75 tons a year for about a 500 megawatt reactor. I think that is about right. It is a very small quantity of uranium relative to what our uranium producers could produce in one year.

Mr. Badanai: What about the manufacture of the reactors? You have also been very

successful in merchandising reactors in the past, have you not?

Mr. Gray: Only in Canada. And the ones in India and Pakistan, of course. As far as we are concerned, we do not manufacture any equipment. We are consulting engineers really in the nuclear power part of our package, but we have now taken on the responsibility of managing projects which we will bid in Romania or Italy or Australia or South Africa, and guarantee to supply a plant that may cost \$100 million or \$150 million. The only input that we will have is the engineering, which may be \$10 million. The rest we have to get from Canadian industry and we get bids from Canadian General Electric Company Limited, from Canadian Westinghouse Company Limited, Vickers of Canada Limited, Montreal Locomotive Works Limited, and so on, and we put the bids together. Then we take the responsibility for supplying the Canadian equipment in that plant at a fixed price. The successes we have had up until now in the export field, that is with India, have been cost contracts. It is going well, but there was no fixed price bid. This is the first time that we will be bidding fixed price.

Mr. Badanai: Who will be the manufacturer of the equipment that you specify?

Mr. Gray: The number of suppliers we used in the Douglas Point plant which is a 200 megawatt plant, totals over 600 suppliers. I do not have a list of the major suppliers. The turbine generator is the main big piece of equipment. That came from Britain. For the nuclear portion of the plant, we do not call for bids from any place but Canada, if it is available. As a result we get a little over 80 per cent of Canadian supply. The other 20 per cent is special pumps or valves or special material that are not yet manufactured in Canada. This is changing slowly. I would think that in 10 years the 80 per cent might rise to 90 per cent, but there will always be some pieces of equipment or some material that we will have to import.

• 2035

Mr. Badanai: Thank you, Mr. Chairman.

The Chairman: Maybe I should say a word here before recognizing the next questioner. At the original meeting of this Committee we decided that we would have no supplementary questions on the first round of questions, and we would like all questioners to limit their time to approximately 10 minutes. If

you carry on to that point I will let you know when your time is approximately up, so that you can round it off. Then if you wish to go on the second round of questions you can so indicate.

Mr. Gray: For the record, the questioner started off by saying the Atomic Energy Control Board had this responsibility, and what was meant was Atomic Energy of Canada Limited. The Atomic Energy Control Board's responsibilities are a little different. The record should be changed.

The Chairman: Mr. Deakon.

Mr. Deakon: Thank you, Mr. Chairman. I was wondering whether the gentleman can advise the Committee how many tons of uranium are known to exist in Canada at present?

Mr. Gray: I would defer to Dr. Laurence. This is a little out of both of our fields. It is Eldorado Nuclear Limited who have the direct responsibility, but maybe Dr. Laurence has a reference.

Dr. Laurence: Mr. Chairman, I am referring here to the report issued by the European Nuclear Energy Agency and the International Atomic Energy Agency on uranium resources, Revised Estimates of December, 1967, and they list for Canada 200,000 tons of reasonably assured resources that could be mined at less than \$10 per ton. Of course, if you go to lower-grade material, the recognizable quantities are larger.

Mr. Deakon: What is the rate of growth which you forecast for nuclear energy, say within the next 10 or 15 years, and the use of this energy over other forms of energy?

Mr. Gray: This will be kind of difficult to recall. We have done some work and have quite extensive reports on the increased application of nuclear energy in Canada.

The main growth is in Ontario until 1980 when the Province of Quebec will start to come in, and by 1990 Quebec and Ontario will be installing about the same amount. The figures I have are in billions of kilowatt hours, and this is rather hard to assimilate, I think. We have a report on this, an AECL report, that gives charts we can file with the Committee. It gives not only the increase in application but the effect on savings, that is, what we expect the savings will be from any other alternate source of energy in Ontario, Quebec and The Maritimes. I think it might

be of interest to the members. But the increase in Ontario is very large, starting immediately, and the increase in Quebec starts in 1980. That is the main application of nuclear energy in Canada until 1990.

• 2040

The Chairman: Is it the desire of the Committee that Mr. Gray supply each member of the Committee with this document to which he is referring? Is it agreed? Agreed. Mr. Deakon.

Mr. Deakon: What is a high gain breeder, and is there any research being done on this at present? And if so, when do they expect to perfect it.

Mr. Gray: There is a great deal of research being done in other parts of the world. We have no program in Canada on the breeder reactor system, for a number of reasons. We really do not think they are necessary for Canada in the next 15 or 20 years. They are very expensive. Any new reactors are very expensive to develop from scratch. Whether anybody will really develop a high gain breeder or not is a bit of a question mark at the moment.

A high gain breeder is one that breeds quickly so that you get a doubling time of a few years rather than a doubling time of, let us say, 20 years. Dr. Laurence is a nuclear physicist, and he can give you a much better answer. But as far as the program in Canada is concerned, we do not have a program. We have just reached an agreement with the United States Atomic Energy Commission so that the results of their whole program are available to Canada, to AECL and to Canada. You might like to expound on the high gain breeder aspect, Dr. Laurence?

Dr. Laurence: Mr. Gray has answered the question very well. Breeding times, that is doubling times, time for doubling the quantity of fuel that is envisaged in present designs, is a little more than 10 years. That is to say, 10 years from a given date you will have twice as much fuel, a little more than that, than you started with.

Mr. Deakon: If the high gain breeder were developed by another nation, how would it affect, if at all, your transactions in the world markets?

Mr. Gray: We do not think it will affect them at all. In fact, we think the breeder reactors, any of the high gain breeder reac-

tors, require our type of reactor to get started. They have to have plutonium to start them, and our type of reactor is the best, most efficient, plutonium producer in the world. It may affect our program 20 years from now when these plants are available. We may have to change and adopt that type of plant or develop that type of plant, but it will not affect the plants that have been built, our type of reactor, because of the unique low fuel cost of our type of reactor. Once you have it built, you are going to run it because the fuel costs are so low compared to those of all other reactors that have been developed to date, and to coal, oil or gas. The only thing that is lower is hydraulic or some of these breeder reactors. Until they come in there is no competition in the low fuel cost, so we expect that the reactors we are building will stay competitive and be used.

The Chairman: Mr. Ritchie?

Mr. Ritchie: Mr. Gray, recently the Minister announced a deal or an arrangement with France, an exchange of atomic know-how or whatever it was. Can you give us an idea of what was involved in that?

Mr. Gray: Yes. The French have a very large atomic energy program, both civil and military. They have developed a different type of reactor system than we have in Canada. The main line of reactor development in France has been a gas-cooled system, and there are some question marks as to whether this particular line of reactors is as good as ours or other types and so the French are looking at other types of reactor systems. They did build one heavy water moderated reactor, but they cooled it with gas. It had some materials troubles that appear to be insurmountable so that it is not likely to be a good commercial reactor.

• 2045

So the French were interested in the Canadian type plant, in looking at it anyway, and this is what was the basis of the agreement. We have had good relations with the French Atomic Energy Commission for 20 years or more, but this is the first really close collaboration that we have entered into. We have a principle that we follow on any of these agreements; we take a look at the initial inputs to any agreement and try to balance them with a cash payment. This is what we did with the French. Their main input is a very large research program on materials for

reactors. The results of their gas reactor program we are not really very interested in. They had their heavy water reactor program. But when we balanced that with our program we felt, and they agreed, that we had a bigger input; so they put in a cash payment to balance the scales. We then looked at the inputs from both parties during the next five years—it is a five-year agreement—to see whether we thought this would balance, and we were satisfied that it should balance. If the French decide they want to build a Canadian-type power station, their input will be very large; that is, they will put a very large effort into it, much more than we can put into any one plant. And that is all available to us. If they decide not to build a heavy water plant, then they do not want our information anyway so there is really no exchange.

We feel that we have reached an equitable arrangement with France, and they are very active now with people in Canada, and we will have people in France.

Mr. Ritchie: Do I understand, then, that you are not supplying anything but an exchange of information and knowledge back and forth?

Mr. Gray: So far as that agreement is concerned, that is right, sir. There were two quite separate agreements with France that came within a week or so. One was the supply of some plutonium, which was a straight sale of plutonium, or the sale of irradiated fuel that contains plutonium. That was a separate package; in fact, it was negotiated quite separately. But in this technology exchange arrangement it is just information. It does not include a complete power station design, for instance; nor does it include a reactor design. It just includes technology in both ways.

Mr. Ritchie: I understand at the moment that they paid Canada a cash amount on the basis that your information was greater than what they were then giving to you. Can you tell us how much that was?

Mr. Gray: I am afraid I cannot. That is a commercially classified piece of information that both parties have said they would keep confidential.

Mr. Ritchie: But in the next five years it is sort of even Steven. Is that right?

Mr. Gray: We concluded that it will be even Steven. Personally I feel that if they

decide this is the system they want to develop, they have much greater resources than we have, so that I would think the information available to us would be greater than what we can supply to them during that period.

Mr. Ritchie: Can you say very briefly how you arrive at selling know-how?

Mr. Gray: You use a crystal ball. There is no way of being precise in this. We have done this with the British, with the Indians, we are doing it with the Japanese, with the French—I guess that is it—and we are now in the midst of negotiations with the Italians, and it is just whatever you can get. If we can get \$5 million for a piece of information which might have cost us \$200 million, \$5 million is a very small part of the actual cost. But it is just a straight negotiation. It is based a little on the cost of deals of a similar nature made with other people.

• 2050

Mr. Ritchie: Do you hope by an exchange of know-how and information to sell some plants in the future?

Mr. Gray: We hope to sell some plants without an exchange of information. We do get criticized by the Americans and even by Canadians for being on the wrong reactor line, and if we can get a country like France to decide that this is a good reactor line, we have one of the best sales gimmicks we can think of.

The Chairman: I might say I have on my list Mr. Comeau, Mr. Moores, Mr. Roy, Mr. Paproski and Mr. Beaudoin. Mr. Comeau.

Mr. Comeau: Thank you, Mr. Chairman. Mr. Gray, in your 1967-68 Annual Report I see "Intense Neutron Generator". This apparently has been scrapped this year. Briefly, what was the purpose of this Intense Neutron Generator?

Mr. Gray: It had a multitude of purposes. The prime object was to produce a source of very intense neutrons by a reaction that is different to the normal way. The normal way of producing neutrons is in fission. You split a uranium atom and that releases neutrons. We in Canada have been fortunate to be supported sufficiently so that we have had some of the best neutron sources in the world. The NRU reactor was by far the best research reactor in the world for a number of years and is one of the reasons that we are in the

position we are in today of being one of the leaders in the world. But we are being surpassed. It is a sort of leap-frong operation. The Americans are now producing something that is 10 times or 15 times better. Our scientists were asked to produce something—what are we going to be doing in 1975? This was in 1965 or 1964. So they came up with a number of projects really related to our general line of work, which is working with neutrons, and they proposed this intense neutron generator. It happens to have a lot of other ancillary uses—such as producing mesons—but the prime reason was to produce this very high intensity of neutrons by spallation, that is, you accelerate particles and hit a lead-bismuth target and knock them off.

Mr. Comeau: Mr. Chairman, on that point could you name—I do not want a long answer—some practical uses of this?

Mr. Gray: It is primarily to be used for research of material. However, it had one immediate practical application—to produce isotopes. Most of the isotopes are produced by neutron bombardments, and with this high source of neutrons, we would be able to produce isotopes for research, for sale, of course, and for medical treatments that are not available anywhere else in the world.

One other possibility, and this is a long way out, is that it might have produced what we call electrical breeding, that is getting out more electrical power than you put into it. It might have produced more fissile material, in which case you would actually get out of the machine more power than you put into it. This would be like a high gain breeder. That is just a gleam in the eye of the scientist. It is quite feasible, theoretically, but it is quite far down the line.

Mr. Comeau: This has been completely scrapped. Is that right?

Mr. Gray: The project has been cancelled.

• 2055

Mr. Comeau: Can the money that was spent there be used for any other purpose?

Mr. Gray: Yes, we are just now winding up the ING project and cancelling contracts and re-directing. In fact, I spent a day last week with the staff at Chalk River trying to decide what lines we would take.

Some aspects of this are really worth developing. There is an injection system where you have to get your particles into an accelera-

tion which is nearly finished. We will finish that off in the next year or so. There is a section of an accelerator that we think might have application in medical treatment, in research, in isotope production. We will build one section of that in the next year or so. We think we will carry on with the lead-bismuth target work. This is pumping around liquid metals because we think this could have an application in high temperature cooling systems of reactors. One of the things we have to do to our reactors is get the temperature up. So it looks as though we will salvage those three parts of the ING project, but as far as ING is concerned, it is cancelled. There is no indication that it is just delayed. We are re-directing our whole program.

Mr. Comeau: So some of it could be used for other purposes, then?

Mr. Gray: Yes.

Mr. Comeau: Is this in the future or just in the immediate future?

Mr. Gray: It depends on the support we get in the way of funds but this accelerator work could easily be a 10- or 15-year program.

Mr. Comeau: I see. Do you feel, as President of the Atomic Energy of Canada Limited, that this should have been scrapped?

Mr. Gray: We only take directions from the government. We were advised there were not enough funds.

Mr. Comeau: Obviously you felt there was a need and a purpose for this, right?

Mr. Gray: Yes, but also, having been offered so much money by the government to do our program, our Board did not put ING above our power program. When we had to make a selection, we selected the support of our power program. Had we gone back to the government—we did not—but I suppose had our Board gone back to the government and said “we would like to cut out research in our power program because this is more important”, we might have got a new hearing. But we did not, nor would we. The power program is at the moment much more important to us so we did make our own priority selection.

Mr. Comeau: Approximately how many universities were involved in this project? I take it there was research with universities at the same time?

Mr. Gray: There were several universities—I would say eight to ten—involved in the project on committee work and so on. I do not think there were more than three or four that had contracts to do development work with respect to it. But there was a large involvement of university staffs either on committees or working at Chalk River during the summer or on a year's leave of absence.

Mr. Comeau: What would have been the total cost of this?

• 2100

Mr. Gray: The Science Council Report has it at \$155 million. I think it comes into focus a little better if you take it as a \$20 million or \$25 million a year project. That is about what it would cost per year, including building and operating.

Mr. Comeau: How much has been spent there already?

Mr. Gray: About \$4.5 million to \$5 million over three years.

Mr. Comeau: Mr. Chairman, do I have time for more questions?

The Chairman: I will call the next questioner. Mr. Moores? I am sorry—were you finished?

Mr. Comeau: I will pass.

The Chairman: Do you have one more to round out your questioning Mr. Comeau.

Mr. Comeau: I have one more question on Item 60. There is a large increase in atomic energy research of over a million dollars. What has caused this. For 1967-68 you have \$2.5 million and now you are asking for \$3.9 million.

Dr. Laurence: Mr. Chairman, in part this reflects the gradual growth, year by year, of atomic energy research activities in our universities but the major reason for that increase in the last year is to defray the first year expenditures on the TRIUMF project. TRIUMF is another one of these pieces of research equipment which accelerates atomic particles—bits of atoms—to very high energy and beams of these high energy particles are used for atomic energy research. There are at the present time in about 10 of our universities pieces of equipment of this kind but their capabilities are limited. TRIUMF is a more powerful machine which permits extending

research capabilities very considerably. It will open up the possibility of scientific investigations in the study of the nucleus of the atom which were not before possible and not possible at the present time in Canada. It also will make possible the production of mesons. I might interpolate here that mesons were one of the things which the ING project also could produce. Mesons are particles which were discovered only a few years ago. By particles again, I mean parts of atoms. They are very mysterious particles and they appear to play a very important part in the forces inside the nucleus of the uranium atom. A fuller understanding of the nature of these particles, how they behave, would add very considerably to our understanding of atomic energy, what it is—all about it. It is a very interesting and exciting field of research.

TRIUMF would open up possibilities to Canadian scientists in our universities to enter this field of research. It is a piece of equipment which is not nearly as large nor as expensive as the ING project, and it is for a different process and the different purposes I have indicated. So, the main reason for the increase this year is this piece of equipment.

Mr. Moores (Bonavista): Thank you, Mr. Chairman. My first question is to Mr. Gray and refers to an earlier question regarding the expertise that Canada is exporting to other countries on behalf of Canadian industry or Canadian science, whichever way we look at it. Is this done on a foreign-aid philosophy or is it done on a commercial basis with profit in mind?

Mr. Gray: The first reactor we did for India was a research reactor which was straight foreign aid. It was done under the Colombo Plan. The total cost to Canada was around \$20 million. The next project for India is a loan under export credit insurance and it is two nuclear power stations, where we are paid all our costs. Canadian General Electric have supplied a plant to Pakistan on a mixed basis of part aid and part loan. On any of these new projects, such as Romania we will be including in the bids normal commercial profits. We do not have the bids yet but we expect to operate as a normal commercial company.

• 2105

Mr. Moores (Bonavista): I assume you would almost refer to yourselves as consulting scientists. Do you see the commercial success of these enterprises reducing your

budget requirements at any time? Do you think that will ever occur, or will it not be a commercial venture in that light?

Mr. Gray: I suspect by the time we are really producing significant profits—and this will take eight or 10 years—that the business will be large enough that we, as a Crown agency, will be asked to get out of it and put it into private industry. We expect to make some profits but I do not think we will ever get to the position where we are big enough to carry on whole programs. We will probably get out of the business.

Mr. Moores (Bonavista): I have one other question, sir, and it is on a different subject. With regard to the scientist requirement, which must be considerable, do you have much difficulty in either acquiring scientists of the calibre you want, or in retaining them having in mind the famous "brain drain" which we are led to believe exists? Does it exist?

Mr. Gray: Things have changed quite rapidly in the last year and there is no difficulty in getting scientists per se. There is always difficulty in getting the man you want for a particular job.

However as I indicated to the Senate Committee, the supply and demand situation is now changed and while we normally send quite a strong recruiting team to every university across Canada interviewing prospective graduates looking for jobs, either in the post-graduate schools or the under-graduate schools, we probably will not do that this year. There appears to be no requirement for it. There are more applicants than we have jobs for. There are two reasons: one, there are more applicants and, two, our budget is cut back so much that we do not have very many openings.

Mr. Moores (Bonavista): Is the reasoning behind the development you mention in Ontario and Quebec of these tremendous atomic energy installations—that it is more economically viable than hydro, say, or has it to do with a future scarcity of hydro? Is there any correlation between the two here?

Mr. Gray: Any hydro resource within reasonable distance of a load centre should be developed, and this is what is happening. Ontario has developed all of its hydro resources within this reasonable distance and when Quebec finishes Churchill they are going to have to move to other sources of

energy. This is where the nuclear plant comes in because it is more economic than any other energy available in Ontario or Quebec such as imported coal or imported oil.

Mr. Moores (Bonavista): Since I come from Newfoundland I would like to correct just one thing you said, sir. When Quebec "uses" Churchill, not "finishes" it.

Just in closing, I thank you, sir, for your candid remarks and hope that the reason the information on our value to France is being kept confidential is not because of the value they put on it. I hope that is not the case. Thank you, Mr. Chairman.

Mr. Roy (Timmins): Mr. Chairman, with regard to Items L5, 10, 15 and 20, the loans in total amount to \$112 million. Since these are loans, am I to understand that they are recoverable, and if so, how are they recoverable?

Mr. Gray: Well, L5 is broken down into three or four—I do not know what breakdown you have in front of you.

Mr. Roy (Timmins): Candu-BLW, Pickering and so on.

Mr. Gray: I see. The Gentilly nuclear power station is being built by Atomic Energy of Canada Limited in the Province of Quebec with Hydro-Quebec under exactly the same formula as we built the Douglas Point plant with Ontario Hydro. When the plant is completed Hydro-Quebec will purchase it from us at a price that will allow them to produce power as though it were a coal-fired plant. This plant is estimated to cost about \$105 million and when everything clears away we will get something like \$80 million. So that, although it is put up as a loan here we may not get the total loan back on that one.

• 2110

Mr. Roy (Timmins): There is a loss on the loan.

Mr. Gray: The treasurer has pointed out that we only borrow \$80 million because we are charging all the engineering and so on to our operating vote; we will not borrow the whole \$105 million. I suspect, in spite of the good bookkeeping we have, that we may have a small write-off problem.

In the case of the Pickering Nuclear Power Station, this is a formula between the Province of Ontario, the Federal Government and Ontario Hydro. All three partners are in this

on a funding basis that is designed to pay the whole thing, and there should be no residual expense left over on that one. On Pinawa housing we charge rents to get the money back or sell the houses. On our commercial products we have borrowed money to build that new South March establishment; they pay back by depreciation earnings. In that loan item only the first one may not be totally refunded.

L10 is Heavy Water inventory and this will all be paid for. This is just pre-delivery of material from the Canadian production plants. I do not think we will need that much money this year because there is no production. But if they produce this much we take it into inventory and sell it at our cost, including all our carrying charges.

The Nelson River transmission line is an agreement between the Federal Government and the Province of Manitoba to build a line from Kettle Rapids on the Nelson River to near Winnipeg. We will actually own the line but there is a formal set-up to pay it off. Manitoba Hydro will pay it off over a period of years. So, we expect that to be paid out.

The last item is an advance to Deuterium of Canada Limited of \$16.4 million. This is an agreement between the Province of Nova Scotia and the Federal Government. It is an advance payment on delivery of heavy water to be made as soon as heavy water is delivered. That loan, including interest, will be written off.

Mr. Roy (Timmins): Thank you, sir. In the administration and expenses we have an addition in personnel of six bodies, or salary years as they call them now. Sir, is this related to the particular project that the other gentleman was speaking of?

Dr. Laurence: May I ask which vote this is?

Mr. Gray: Is it vote 60?

Mr. Roy (Timmins): Vote 55 sir.

Dr. Laurence: No; this refers to the staff we have engaged in the regulatory functions.

Mr. Roy (Timmins): There is no specific function for the additional six? Is it not another project?

Dr. Laurence: No, it is not a new research project. It has nothing to do with research projects.

Mr. Roy (Timmins): That is fine; thank you.

The Chairman: Mr. Paproski?

Mr. Paproski: I have one question of Mr. Gray. I understand the federal government, or you have contracted with Deuterium of Canada Limited to buy at so much a pound. Could you tell us what that figure is? Is it available?

Mr. Gray: Yes; we have a contract, or an agreement, with Deuterium of Canada Limited and with Canadian General Electric, who are both building plants in Nova Scotia.

The figure varies with time and production quantity. The first figure is \$20.50 per pound and then the price drops related to each 1,000 tons, or a date.

I cannot be very specific because there is this question of limiting dates. But normally each 1,000 tons is a different price until they have delivered 5,000 tons.

The prices range from \$20.50 down to \$16.00, but in the last two prices—this is becoming complicated—there is some escalation, the maximum of which is 50 or 75 cents. The average price is \$18.15 for the whole period.

• 2115

Mr. Paproski: Have you since found out that you could manufacture heavy water for less than you are paying for it right now?

Mr. Gray: If you have a source of energy that is less than their cost, which is something like 25 cents a million BTU, you should be able to produce heavy water for less than these figures.

Mr. Paproski: Is there another development, or another plant, such as BA, in which they could manufacture heavy water at a price less than this? You probably know what I am talking about. Has anything else been done in order to—

Mr. Gray: It has not materialized.

Mr. Paproski: It has not materialized?

Mr. Gray: It has not materialized. As far as I am aware that BA program has stopped.

However, we have quite a major project at Chalk River on new heavy water processes and we hope to come up with better processes than those being used in Nova Scotia. But we have not come up with one yet. All we are looking for now is a source of lower cost energy.

Mr. Paproski: Are there places in Canada where you are looking right now?

Mr. Gray: Yes, there is one right here. The one depicted in the picture on the cover of our last annual report has the lowest cost energy you can get—a nuclear plant that gives you very low cost steam. Other than hydro power, burning uranium is the cheapest way of getting energy.

Mr. Paproski: I have one more question, sir. You are competing against private enterprise on the mechanical design of these reactors. Is there no one in Canada who can do the design competitively? For example, on the Colombo Plan, where they have spent \$18 million, what general contractor assisted you in the building of the reactor?

Mr. Gray: AECL is concerned only with nuclear design. We design only the nuclear part of the plant. In any of these contracts overseas, or even in Ontario or Quebec, a very large part of the engineering is done by normal consulting engineers. In Ontario hydro it is done by Ontario Hydro; in a job in Quebec it is done by Surveyer Nenniger & Chenevert Inc. and Montreal Engineering Co. Ltd. In India it was Shawinigan Engineering Co. Ltd. and Montreal Engineering Co. Ltd. So that very largely the normal consulting engineering content of all these jobs is done by a normal consulting engineer.

Mr. Paproski: But are Canadian contractors who bid, given preference because we are supplying the technical know-how on the atomic energy?

Mr. Gray: For engineering there usually is not any bidding. If we are going into a job we select—

Mr. Paproski: You select the contractor?

Mr. Gray: We select the consulting engineer, usually by agreement with the client. The only occasion on which someone from outside gets in on it is if he has some local knowledge. Some local engineers are used in India, but not very many.

Mr. Paproski: Your preference is for Canadian contractors on these plans as, say, in India. But now that you are talking about Romania and India and you are bidding a little differently from what you did on the Colombo Plan type of package; is that right?

Mr. Gray: Yes.

Mr. Paproski: Therefore, when you are bidding on the Colombo type package, or under our aid plan, do you give Canadian contractors a preference over everyone else?

Mr. Gray: On any of these jobs you have to have at least 80 per cent Canadian content or you do not qualify for loans or aid; so that all the supply of the nuclear plants that can be Canadian is Canadian.

Mr. Paproski: You were talking, sir, about the pumps. I understand they are a big part of a plant such as this. You say that if they are available you will buy them from Canada. Are they not available?

Mr. Gray: They have not been available. I think I can say they are now nearly totally available in Canada. The pump manufacturers have moved into Canada and set up a plant. It may be that some parts, such as a bearing, or a pump bowl, or some blades, come from offshore.

• 2120

Mr. Paproski: Did you say that 80 per cent of the total project has to be Canadian, or that ...

Mr. Gray: No, 80 per cent of the Canadian financing has to be Canadian supply. For instance, if there is a loan for \$1 million you have to have \$800,000 worth of Canadian equipment in it.

Mr. Paproski: Thank you, Mr. Gray.

The Chairman: Mr. Beaudoin?

[Interpretation]

Mr. Beaudoin: I wonder whether these reactors can cause water pollution?

[English]

Mr. Gray: No; this is one of the advantages of a nuclear source of energy over some other thermal sources. It does not cause air-pollution. The sort of pollution it causes, about which people complain, is that caused by raising the temperature of water. There is the same turbo-generator on a nuclear plant that there is on a coal-fired plant; therefore, the condenser cooling water on a nuclear plant is the same as that on a coal-fired or oil-fired plant, and that does raise the temperature of the water. This is one of the complaints about Lake Erie, that the temperature of the water is being raised and that this is causing pollution.

But there is no atmospheric pollution from stack gases. Dr. Laurence will not let us put any activity up the stacks. His control board keeps us very clean. There are possible pollutants produced in the fuel. The fuel bundles are very radioactive and have in them a lot of material that you simply cannot let loose, and this is controlled very carefully in all countries. Therefore, the nuclear power station is characterized as being a non-pollutant of the atmosphere.

[Interpretation]

Mr. Beaudoin: Thank you Mr. Chairman.

[English]

The Chairman: Mr. Hymmen?

Mr. Hymmen: Mr. Chairman because we agreed not to have supplementary questions some of mine may appear to be repetitive, but I would like to revert to Mr. Gray's remarks about the export sale of nuclear power plants, and specifically to Romania.

Do I understand that Atomic Energy will be quoting on a package deal for a nuclear power plant for Romania?

Mr. Gray: Yes, sir.

Mr. Hymmen: It was stated in the press this week that it might depend on what Romania was able to sell to us, so I wish you every success in your bid.

Is Atomic Energy, or any other government department, actively promoting the sale of this type of plant? For example, was there anyone with AECL connected with the government mission to South America recently?

Mr. Gray: Yes. We were not represented on the Minister's mission, but we actually had a mission down about two weeks prior to the Ministers'. It was only to Brazil and Argentina, but there are very active discussions going on in the nuclear field, particularly with Brazil.

The Argentine program is being looked after at the moment by Germany. Canadian General Electric bid on that project but lost out.

This is an active part of the world and when Mr. Greene came back he indicated that he had raised specific questions with countries such as Peru. It was one of the items of fairly active discussion in all the Latin-American countries.

Mr. Hymmen: I now have a very general question. You mentioned a nuclear power

plant, a thermal generating plant and a hydraulic plant. Are any figures available on the capital and operating costs of these types of plants, each of the same energy capacity?

• 2125

Mr. Gray: Yes; a multitude of figures is available. I did not bring them tonight.

Roughly, three main types of nuclear power stations are now being installed in large sizes and in large quantities.

The British have what they call an advanced gas reactor. That is a high capital cost plant—just about as high as ours—with a fairly high fuel cost.

The American type of plant, what they call a light water reactor, using enriched uranium, has perhaps a 25 per cent lower capital cost than ours, but has fuel costs that are two or three times as high.

Our plant is characterized as being of fairly high capital cost, in its present sizes, and of very low fuel cost.

We can give you any amount of statistics and figures on them, but those are really the characteristics of the two main types of plants now being operated.

Mr. Hymmen: Does this compare favourably with...

Mr. Gray: Hydro is very much like ours. The capital costs of most hydro installations are higher than ours, but they beat us out on fuel costs. They just let the water run through the turbine.

Mr. Hymmen: And where is thermal power? Is that in between?

Mr. Gray: Thermal power is quite low in capital cost—lower than any of them, by about a half—but the fuel costs are very high, of the order of 3 mills per kilowatt hour. We expect to get down to total costs of very close to 3 mills per kilowatt hour when we get the very large stations.

Mr. Hymmen: I have one final question. It could be considered as relative to the administration of AECL.

Mr. Gray, are you familiar with directive CW-53 that was issued in September 1967, in relation to employee-participation in political activities?

Mr. Gray: I am not familiar with that particular one. I am fairly familiar with employee-participation in political activities, but—

Mr. Hymmen: Mention was made of it I imagine, after the Public Service Employment Act was brought in, and I am familiar with it because I happen to be on that Committee.

Was this directive issued on your own initiative, or did it involve some advice from government sources?

Mr. Gray: Apparently it was on our initiative.

Mr. Hymmen: Are you aware that other Crown corporations may not have the same directive, or are you not concerned about that?

Mr. Gray: We are really concerned about our own operations primarily. I am not sure whether other Crown corporations—well, I think what we have to do is look after ourselves. We are really concerned with our own operations and we do not really get involved in the procedures of other Crown corporations—I do not know which ones you are talking about.

Mr. Hymmen: Well, I have information regarding Polymer Corporation and also the St. Lawrence Seaway who apparently have not had that type of restriction on their employees.

Mr. Gray: They have a little different operation, too. I do not know about the St. Lawrence Seaway, but certainly Polymer Corporation is not dependent upon Parliamentary votes. They are in a different category of Crown corporation. We are "C" and they are "D" and the two are quite different. I think really what we are basing our action on is the fact that we are dependent upon Parliamentary appropriations whereas Polymer Corporation is not; it makes money.

Mr. Hymmen: Thank you.

The Chairman: Mr. Harding?

Mr. Harding: Mr. Chairman, I would like to ask Mr. Gray one or two questions. I think members have already asked most of them but I would like to go back to this research project which has been cancelled, if I may, and one question I would like to ask is whether you had to let any of your research staff go when they dropped the project?

• 2130

Mr. Gray: No; none of the AECL staff have had to be laid off but we had a number of

attached staff from industry, from consultants and from universities. All these contracts have been terminated, but we have enough funds for this year and we hope to have enough next year to keep our regular staff employed. Where we will be really short of funds is contract money to do contract development work in our industries.

Mr. Harding: You have not lost any of your key research individuals as far as you—

Mr. Gray: Not that I am aware of as a result of ING being a cancellation. We do have a turnover of good people leaving us and going back to universities or going to industry or going elsewhere, and this is a good thing although we do not like to lose good people. I am not aware of any transfers as a result of ING.

Mr. Harding: This is another follow-up on a question that was asked lately; it is in connection with the pollution of water by heating. I think they have this problem. The Americans have it, I know, at the mouth of the Columbia River and it is the heating of the water, I understand. How many degrees would the water temperature be raised? Does it vary with different plants?

Mr. Gray: The energy you are pouring out of your condensers if you are operating at steady power is fairly constant and it really depends on how much water you are pumping through, but on a place like Lake Huron where we have this plant you would not have to go very far out in the lake to find no rise of temperature at all. Lake Erie apparently is having difficulty, not only with this but on the American side with so many energy producers, not only power stations but chemical industries, and so on, that raise the temperature of the lake and this causes formation of algae. Dr. Laurence, have you any numbers of the—

Dr. Laurence: We made an estimate the other day of this in view of the interest in it, Mr. Chairman. The estimate was made in connection with the proposed plant near Toronto, the Pickering Station, which will be 10 times as powerful as the one to which Mr. Gray referred. It is a big plant; 2,000 megawatts. Now, the amount of heat that plant will be putting into Lake Ontario will raise the average temperature of Lake Ontario not more than a few tenths of one degree Fahrenheit.

Of course, locally, the temperature rise will be greater. The water will come from the con-

condensers of that plant at something under perhaps 90 degrees Fahrenheit, but the warm water is fairly soon dissipated in the lake. There will be an area within, well a mile or two where there is a noticeable change in temperature. You would notice it in bathing but if you get any distance from there, you get down to a tenth of a degree.

Mr. Harding: Thank you.

Is any research being done into the effect which this rise in temperature might have on the various organisms in the water? Is there any agency doing this research?

Dr. Laurence: The Ontario Water Resources Commission has been involved in investigations, co-operating very closely with some of the staff in Mr. Gray's organization on just this problem, the effect of the effluents from these plants in the Great Lakes.

Mr. Harding: You say the warming of the water is the only type of pollution you have. I mean, there is no...

• 2135

Mr. Gray: Most of the pollution you get from the thermo stations is a stack gas; coming from a coal-fired plant, it is the SO_2 that is the main troublesome one, I guess, and the effluents from our stack gases are controlled. We have to control them so closely for radiation emissions that there is virtually no pollutant coming out.

Mr. Harding: I think the figures I have seen for the big American plant at the mouth of the Columbia is just a fraction of one degree.

Mr. Gray: Yes.

Mr. Harding: I can see where a number of stations around a body of water could affect it materially. The Columbia is quite a large river, of course. I have one or two more questions. In the brief you presented to us you mention permits, and apparently your Board has to issue permits. According to this you have issued 169 permits for export and 50 for import. My question is, have you denied a permit to someone who has applied?

Mr. Gray: This is the Atomic Energy Control Board?

Mr. Harding: Yes.

Mr. Gray: If they have not, I would be surprised; they are a very difficult lot.

Dr. Laurence: I am being reminded that we did deny some permits for export and some for import.

Mr. Harding: What will be the reason for denying an export permit?

Mr. Gray: From our experience there are shipping containers, for instance. We are going to be facing one shortly in trying to export some heavy water that happens to be contaminated because it came out of big American reactors and we find that the regulations the Control Board has are going to make this nearly impossible. I think under the present regulations they would deny us the right to ship some of this heavy water overseas unless we can convince them that it is really safe, so I think packaging is one of the things you are likely to come up against.

Dr. Laurence: In general, failure to comply with regulations is the answer. It can vary in detail.

Mr. Harding: Have you had to turn any down because you felt the material might be used for other than peaceful purposes?

Mr. Gray: Well, I suppose the big French uranium deal was not consummated. I do not know who turned that down. I do not suppose it was the Atomic Energy Control Board, but because we could not reach a safeguards arrangement.

Dr. Laurence: During the time I have been associated with the Board there has never been an occasion where a shipment has been denied for that reason.

Mr. Harding: Is it your Board that has a close inspection of the material you sell to check and make certain that it is being used for peaceful purposes?

Dr. Laurence: This problem usually arises in connection with exports. The export of uranium is sometimes done under the terms of a bilateral agreement with another nation and it may be part of the terms of the agreement that Canadian inspection officers carry out the necessary inspection to make sure it is being used for peaceful purposes. Under those circumstances employees of our Board actually make the inspection.

Mr. Harding: Are they permitted to go back time and time again to check?

Dr. Laurence: Yes.

Mr. Harding: That is good. Now, I have another question in connection with permits. I notice that you talk about issuing permits for uranium exploration. Does this mean that if someone goes prospecting for uranium he has to get a permit from the Board, or am I misinterpreting that?

Dr. Laurence: No permit is required for prospecting. As you can readily appreciate, this would not be practicable because the prospector very often is not quite sure what he going to find. He may discover uranium when he is out looking for something else. It would not be possible, but if he undertakes to go underground or do any work for the purpose of developing a uranium or thorium mine, then a permit is required.

• 2140

Mr. Harding: Now, there are one or two more questions I would like to ask. I am extremely interested in Mr. Gray's remarks about the use to which you are putting the nuclear power stations. There is no doubt about it—it is the coming thing; hydro sites are rapidly running out. A number of questions have been asked about costs and I think Mr. Gray gave the figure of three mills that this Pickering plant—is that the one you mentioned—that you could produce...

Mr. Gray: The three mill figure was the price of fuel for a coal-fired station but the Pickering plant is estimated to produce power, and this is just the first big station, at four mills.

Mr. Harding: Is this on-site power?

Mr. Gray: Yes.

Mr. Harding: It is on-site power?

Mr. Gray: This is power at the bus bar or the transformer bus of Ontario Hydro at Pickering.

Mr. Harding: How does this compare with the average Ontario Hydro price?

Mr. Gray: I do not know. Do you mean, what do they sell it for?

Mr. Harding: Yes.

Mr. Gray: What they do, of course, is pool all their sources of power and come out with a standard price. They have various pricing formulas, whether it is off-peak power or on-peak power or whether it is bulk power, but it is considerably more than four mills.

Mr. Harding: Well, the Chairman, has waved me down so I will have to let my questions go for the time being.

The Chairman: Mr. Comeau?

Mr. Comeau: Mr. Chairman, I want to pursue the line of questioning that I had a while back. Have you any indication that further projects will have to be scrapped or changed on account of this lack of funds in the near future?

Mr. Gray: We have no such indication. We have no indication that there will be a large increase of funds either, but I would expect that we have reached the bottom. Any further reductions would have to mean a lay-off of personnel.

Mr. Comeau: What type of effect do you think this ING project will have on our science development in Canada?

Mr. Gray: Well, I think there would have to be an increase in expenditures in the research and development field in Canada in the years to come for a number of reasons. One would be to keep up with the competition, but there is another one that I mentioned at the Senate Committee, which to me is as important as any, and that is employment of the people we are educating. The transformation which education is going through now is very large and there is a change in the extent to which we are educating our young people. A great many more students are now continuing on to post graduate degrees in every field, in social sciences, engineering, physics, and so on, and some of these people expect to get employment in the R and D field. If you consider the numbers that are going to be coming out 10 years from now and take a look at the programs that we are developing in order to employ them, they do not match. As I indicated at the Senate Committee, they are either going to be underemployed, unemployed or they will emigrate, and I think it is quite a serious problem. I think this cut back in expenditures will have that effect on the employment of people, and I think this should be viewed very seriously.

Mr. Comeau: Approximately how many scientists were employed at the ING project?

Mr. Gray: Twenty-five or thirty. We were spending about \$1.5 million a year on that project, plus the contract work.

• 2145

Mr. Comeau: What effect does this project have on universities as well as industry?

Mr. Gray: It will affect some of the universities. Some of them will be very pleased. They felt this was the wrong way to spend money; it should have been spent on smaller projects at universities. Some of the other universities will be seriously affected because they can see a major part of their program going into the ING project. It was not going to be an AECL project, it was going to be an institute of some kind. We might have built it but it was not intended that we would operate it. It was going to be part of some university type of structure.

I think on balance that many university people are disappointed. It is also one of very few large, imaginative projects that exists in Canada that could really stimulate scientific activities, not only in our place but elsewhere. It was a very advanced project.

Mr. Chappell: Mr. Chairman, may I speak on a point of order, please? I have some questions but I would like to do some research before I asked them. Will these gentlemen be here the next time we meet?

The Chairman: In view of the fact that we have to pass our items, we will have to ask them to come back. Mr. Gray can be with us on Thursday morning. Could you be with us, Dr. Laurence?

Dr. Laurence: I think I can.

The Chairman: From 11.00 a.m. to 1.00 p.m. We will now adjourn until 11.00 a.m. on Thursday in this same room. Thank you, gentlemen.

Mr. Comeau: Mr. Chairman, on a point of order. We are supposed to have the National Energy Board next Thursday. Would it be

possible to receive the reports beforehand? This is an example of why these gentlemen have to come back this evening.

The Chairman: I would like some time to report on that because if there are many more questions remaining to be asked of these two corporations that are represented here tonight, possibly we will spend Thursday with them and—

An hon. Member: I thought it was Thursday evening. You mean Thursday morning?

The Chairman: Thursday, from 11.00 a.m. to 1.00 p.m.

Mr. Gray: I have a management committee which brings people in from Manitoba and everywhere else. If Mr. Watson can appear for me—

The Chairman: I think we had better have a meeting of the steering committee on this, and tomorrow sometime—possibly after Orders of the Day—we will try to get the documents for you. However, these gentlemen will be before us on Thursday at 11 o'clock.

Mr. Comeau: Mr. Chairman, what I am saying applies not only to next Thursday's group but to future groups as well. It seems to me that if we were given some literature beforehand we could pursue our questioning much easier.

The Chairman: We can arrange this. The meeting is adjourned.

Mr. Harding: Mr. Chairman, I would like to thank these gentlemen for the very informative discussion we have had. I understand that Mr. Gray is not going to be back with us on Thursday morning so I would like to thank him now. I presume the other gentlemen will be back on Thursday and I will thank them then.

OFFICIAL REPORT OF MINUTES
OF
PROCEEDINGS AND EVIDENCE

This edition contains the English deliberations and/or a translation into English of the French.

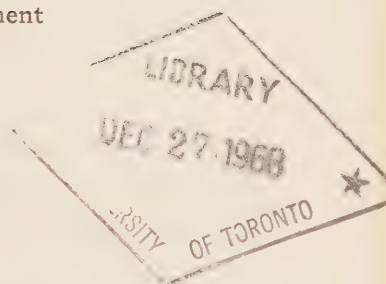
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Translations under the direction of the Bureau for Translations, Secretary of State.

ALISTAIR FRASER,
The Clerk of the House.

HOUSE OF COMMONS
First Session—Twenty-eighth Parliament
1968

STANDING COMMITTEE
ON



NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE
No. 10

THURSDAY, NOVEMBER 28, 1968

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources

WITNESSES:

Dr. G. C. Laurence, President, Atomic Energy Control Board; and Mr.
D. Watson, Vice-President, Atomic Energy of Canada Limited.

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and Messrs.

Beaudoin
Chappell
Code
Comeau
Deakon
²Downey

Gilbert
Harding
⁴Langlois
¹Lessard (*Lac-St-Jean*)
Lind
Moores (*Bonavista-
Trinity-Conception*)

²Paproski
Penner
Ritchie
Roy (*Timmins*)
Sulatycky
⁵Weatherhead—(20)

(Quorum 11)

J. H. Bennett,
Clerk of the Committee.

¹Replaced Mr. Badanai on November 27, 1968.

²Replaced Mr. Ricard on November 27, 1968.

³Replaced Mr. Grills on November 27, 1968.

⁴Replaced Mr. Breau on November 27, 1968.

⁵Replaced Mr. Crossman on November 27, 1968.

ORDER OF REFERENCE

HOUSE OF COMMONS

WEDNESDAY, November 27, 1968.

Ordered,—That the names of Messrs. Lessard (*Lac-Saint-Jean*), Breau, Paproski and Downey be substituted for those of Messrs. Badanai, Marchand (*Kamloops-Cariboo*), Ricard and Grills on the Standing Committee on National Resources and Public Works.

Ordered,—That the names of Messrs. Langlois and Weatherhead be substituted for those of Messrs. Breau and Crossman on the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER,
The Clerk of the House of Commons.

MINUTES OF PROCEEDINGS

THURSDAY, November 28, 1968.

(10)

The Standing Committee on National Resources and Public Works met this day at 11.15 a.m. The Chairman, Mr. Hopkins presided.

Members present: Messrs. Chappell, Deakon, Downey, Gilbert, Harding, Hopkins, Hymmen, Langlois, Lind, Moores (*Bonarvista-Trinity-Conception*), Penner, Ritchie, Roy (*Timmings*), Sulatycky, Weatherhead—(15).

In attendance: Dr. G. C. Laurence, President, Atomic Energy Control Board; and Mr. D. Watson, Vice-President, Atomic Energy of Canada Limited.

The Chairman called Items 55 and 60 of the Revised Estimates relating to the Atomic Energy Control Board and Items 65, 70, L5, L10, L15, and L20 relating to Atomic Energy of Canada Limited. The Committee resumed their examination of Dr. Laurence and Mr. D. Watson.

Following questioning the following items called by the Chairman were *approved unanimously*:

B—ATOMIC ENERGY CONTROL BOARD

Item 55—Administration Expenses of the Atomic Energy Control Board	\$ 392,000
Item 60—Grants for researches and investigations etc.	3,920,000

C—ATOMIC ENERGY OF CANADA LIMITED (RESEARCH PROGRAM)

Item 65—Current Operation and Maintenance etc.	58,919,000
Item 70—Construction or Acquisition of Buildings etc.	9,681,000

LOANS INVESTMENTS AND ADVANCES Atomic Energy of Canada Limited

Item L5—Loans in the current and subsequent fiscal years etc.	51,000,000
Item L10—Loans to Atomic Energy of Canada Limited etc.	4,600,000
Item L15—Loans to Atomic Energy of Canada Limited etc.	40,000,000
Item L20—Loans to Atomic Energy of Canada Limited, subject to such terms etc.	16,400,000

It was agreed that the Chairman attempt to arrange three meetings in the following week for the purpose of hearing the National Energy Board, the National Research Council and the International Joint Commission.

At 12.37 the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Hansard Reporters Present and Reporting)

Thursday, November 28, 1968

The Chairman: Gentlemen, I see a quorum. I call the meeting to order.

On Tuesday evening last I called items 55, 60, 65, 70, L5, L10, L15 and L20. The last four items can be found at page 576 of the blue book.

Before we start this morning I should like to reiterate that at the initial meeting of the committee we decided each speaker would be allowed approximately 10 minutes and that I would give them a warning. The speaker would then round off his questioning and be placed on a list for the second round.

For the benefit of the new members of the committee I should like to call upon Mr. Watson, who is sitting in this morning for Mr. Gray of Atomic Energy of Canada Limited, to introduce his colleague. I should also like to have Dr. Laurence, chairman of the Atomic Energy Control Board, introduce his two officials who are here this morning.

Mr. Donald Watson (Vice-President (Administration) Atomic Energy of Canada Limited): Mr. Chairman, I have with me Mr. G. H. Sprague, treasurer of Atomic Energy of Canada Limited.

Dr. G. C. Laurence (President, Atomic Energy Control Board): Mr. Chairman, may I introduce immediately to my right Dr. D. J. Dewar, chief scientific advisor, Atomic Energy Control Board, and on his right Mr. E. M. Nolan who is senior administrative officer of the Atomic Energy Control Board.

The Chairman: This morning I recognize Mr. Deakon to start off. Mr. Chappell has also given me his name. Is that right? I believe Mr. Harding was on the list for the second round of questioning when we adjourned on Tuesday. Is that right?

Mr. Harding: Yes. I had a few more questions.

The Chairman: We will have to put you on the second round. Mr. Deakon is on the

second round also. I now recognize Mr. Chappell. On the second round it will be Mr. Harding and Mr. Deakon. Perhaps you might hesitate a moment before you start to speak because I should like to call the names for the benefit of the reporters who have requested that I do so.

Mr. Chappell, you may resume your questioning.

• 1115

Mr. Chappell: Mr. Chairman, will somebody please tell me in a few words what a high gain breeder is?

Dr. Laurence: Mr. Chairman, there are two kinds of nuclear fuel materials, what we call fissionable materials. One of them is uranium 235, which is found in nature, which is part of the uranium which one digs out of the ground. The other is plutonium. This does not occur naturally; it is produced in a reactor from uranium, an inert kind of uranium, the kind of uranium which is not itself a fuel. We call it a source material because it is a source for the production of plutonium. This plutonium production can only occur in a reactor.

In the operation of a reactor one is, of course, consuming fuel. One is consuming the uranium 235, which is there naturally. But in the meantime, while this uranium 235 is being consumed, plutonium is being produced by conversion of that other kind of uranium, uranium 238. So in certain types of reactors you have these two processes going on at the same time, the using up of the fuel that was there to start with, the uranium 235, and the creation of new fuel which is plutonium. If you are producing plutonium by this conversion process faster than you are consuming the uranium 235, you are gaining in fuel; you are breeding in fact. That is what we mean by breeding.

Mr. Chappell: I have the point, thank you.

Dr. Laurence: A high gain breeder is one which does this rapidly.

Mr. Chappell: How do we stand, compared with the United States, in the development of the high gain breeder?

Mr. Watson: Mr. Chairman, this is an area which we in Atomic Energy of Canada Limited are not working on.

Mr. Chappell: How do we in Canada stand?

Mr. Watson: We in Canada are not working on breeder reactors.

Mr. Chappell: Nowhere in Canada?

Mr. Watson: Nowhere in Canada. We are keeping informed on what is going on, but not working on it.

Mr. Chappell: I want to ask about the development of the plasma physics field. I understand that there is such a set of equipment at the aero space institute of the University of Toronto. Instead of converting water to steam and drawing off electricity through a generator, it is a matter of heating gas. I understand the gas which they start with is from a jet or rocket, and as they heat that gas electrons are freed and they draw them off. Is there any research in that field in Canada other than at the institute at Toronto?

Dr. Laurence: The answer is yes, research of that kind is going on in the University of British Columbia and there is a little in the University of Saskatchewan.

Mr. Chappell: Would you agree that if their forecasts are correct, this would be a considerably more efficient use of fuel than the means of converting water to steam to drive a generator?

Dr. Laurence: This research relates to the possibility of using the same physical process, which is the basis of the hydrogen bomb, for the production of energy for civilian purposes, instead of atomic energy.

Mr. Chappell: I think this is drawing off the atomic particles that are loosened off. I think they are drawn off by an electric magnet.

Dr. Laurence: Some of the research involves that; but the possibility of a useful civilian application depends on the fusion reaction as distinct from the fission reaction, the kind of reaction which occurs in the hydrogen bomb. To do this it is necessary to realize a very high temperature.

Mr. Chappell: That is a different matter than I am talking about. I am talking about heating gas to the point where some of the electrons are drawn free and are then drawn off by an electric magnet. I understand this is the only place in Canada where this research is going on.

Dr. Laurence: The possibility of a practical application here depends, as I said, on the production of a very high temperature. What this research involves is an electrical method of producing that high temperature. In some of the research they do draw off the particles electrically for certain measurement purposes, but the ultimate purpose is an electrical production at a very high temperature, in this case.

Mr. Chappell: They use gas to get a very high temperature. Is there anywhere else in Canada where they are experimenting with the drawing off of electrons electricity, after heating gas? Is there anywhere else in Canada where this is being done in order to get electricity on a commercial basis?

Dr. Laurence: Neither in the research to which you refer, nor in this other research, is the electricity being drawn off from the gas for the purpose of developing a practical application. That is not the nature of the process which is being investigated.

Mr. Chappell: I am sorry to disagree with you. They have already used a little light bulb and have drawn off enough electricity to operate it in this experiment. They hope to show that it is more efficient than any other system.

Dr. Laurence: I am afraid I know nothing of that investigation.

Mr. Chappell: Are you familiar with Dr. G. N. Patterson?

Dr. Laurence: I know Dr. Patterson.

Mr. Chappell: And Dr. Townsend who is in charge of this project? Anyway, I understand it is the only experiment in the world to draw electricity out of heated gas. I understand, further, that they have been financed by the Defence Research Board, but they have just withdrawn their support. They have a great big machine and another big tower outside. The equipment is worth around \$200,000. But right now they do not have funds with which to carry on their day to day research.

My question is: Do you people see your way clear to put some financial help, money,

behind this project? They need around \$25,000 to \$30,000 a year to continue it. They have an investment of \$200,000 in it.

Dr. Laurence: Mr. Chairman, I am not aware of a research investigation which has the purpose described.

Mr. Chappell: I have mentioned one.

Dr. Laurence: I would suggest that if they are seeking funds for support for this—I beg your pardon, sir. I gather this is going on under the Defence Research Board, is it?

Mr. Chappell: No. I just explained that the Defence Research Board was financing them but they have now withdrawn, not because they are against the project but for their own reasons. So they are now looking for someone to adopt them so they may carry on with this project.

Dr. Laurence: I am sure any project of that kind would be given very careful consideration by the agencies which are instrumental in supporting research.

Mr. Chappell: They are not satisfied with that; they want something positive so they can carry right on with it.

Dr. Laurence: I am sure if they put in an application explaining what they intend to do, explaining in sufficient detail so that those who have to assess the merits of these applications can understand what they are trying to do, it would receive very careful consideration.

Mr. Chappell: Who should the application go to?

Dr. Laurence: This would depend a bit on the nature of it. I would think either the Research Council or ourselves. Probably the Research Council.

Mr. Chappell: They have already written there but have not received a reply. Mr. Chairman, my time is up. I am wondering whether for practical purposes this matter could be left now and I could review it another day or perhaps in consultation with Dr. Laurence later. Will I have a chance at another meeting to go into this matter further?

The Chairman: I doubt it, because we will probably finish with these people this morning, unless you want to go on a second round of questioning.

Mr. Chappell: No, Mr. Chairman. I recognize that Dr. Laurence will have to obtain some more information on this matter.

The Chairman: How would it be if we left it to the two of you to get together afterwards for a discussion on your own?

Mr. Chappell: Thank you, Mr. Chairman.

The Chairman: That is all the people I have on the first round of questioning. I will now start with Mr. Harding on the second round.

Mr. Harding: Mr. Chairman, I was very interested in the costs of developing power other than hydro power; I mean, the making of the comparison of costs. The other day I think one of the witnesses indicated that we had, I think it was four atomic power stations in Canada. I wonder whether one of the witnesses could tell us where these stations are and the capacity of each; and, if possible, the cost of on-site power at each specific plant.

Mr. Watson: Mr. Chairman, the first nuclear power station in Canada was a small one. Its capacity is 25,000 kilowatts. This is located at a small place called Rolphton, which is about 130 miles up the Ottawa River from Ottawa, not far from Chalk River.

The second nuclear power station is located at Douglas Point, which is on the east shore of Lake Huron, near Kincardine. That station has a capacity of 200,000 kilowatts of electricity. These two are both in operation. The third nuclear power station is at Pickering, which is on the shore of Lake Ontario, on the eastern suburbs, if you like, of Toronto.

Ontario Hydro are building four stations in a row at the Pickering site, all of which are 500,000 kilowatt size. Construction is under way for the first two, and then the third and fourth in order. I am not clear why the number four was mentioned, because there is another nuclear power station under construction in the province of Quebec at a place called Gentilly which is across the river from Trois Rivières. I am not sure why the number four was given, but those are the stations which are under construction in Canada or in operation in Canada at the present time.

Mr. Harding: Do you have any figures of the at-site cost?

Mr. Watson: With regard to the first one, the nuclear power demonstration station at Rolphton, we have no figure because we started off explaining that a nuclear power

station of a 20,000 kilowatt size, which involved a tremendous amount of research and development, would necessarily be too expensive. Nobody in their right mind makes a 20,000 kilowatt station. The Douglas Point station was built and the target figure was to produce power at between six and seven mills. This was started in 1958-59 at a time when Ontario Hydro was building 300,000 kilowatt thermal stations, and power costs in the region of five to six mills seemed about right; so that this seemed like a very good first large commercial power station in Canada because, again, there is the factor that this was the first off and there were some research and development expenditures.

When you get to the Pickering series, Ontario Hydro are building the Pickering stations on the basis that the cost of electricity sent out through these stations when they are running will be at least as cheap, if not cheaper, than they can get electricity from any fossil fuels station in their network, in their grid systems.

This is the basis on which the system is being run. Admittedly it is an estimate at the moment but it is an Ontario Hydro estimate. That is why Ontario Hydro is building them. They feel this is the most economic thing to do rather than to build coal-fired stations. As you know, the Ontario Hydro system of building coal-fired stations using imported coal from the United States is the cheapest alternative for generating power.

Mr. Harding: It is a cheaper alternative to what?

Mr. Watson: Cheaper than bringing oil or gas in from the prairies or anywhere else.

Mr. Harding: How does this compare with the hydro cost? You say now this is cheaper than any fossil fuel.

Mr. Watson: For Hydro the question is not only how much it costs where it is produced but how much it costs to get it where you want it. What is happening in a province like Ontario is that the water sources close to urban demands are being developed first. For instance one may think of the Niagara area or of the St. Lawrence and Ottawa rivers. These have all been developed, and Ontario Hydro's problem is that there are no longer large rivers which have not been tapped in the Toronto-Hamilton-Ottawa-Kingston region. So not only do they have to build dams wherever the water is but then they have to transmit

this electricity over many hundreds of miles of transmission lines. This is what puts the price of electricity up. The question is not what the electricity costs are but how much it costs you to take it to the guy who wants it.

At the moment in Ontario there are no further economic hydro resources on a large scale to bring electricity down into the demand centres where Ontario Hydro has requirements.

Mr. Harding: I am not only thinking in terms of Ontario.

Mr. Watson: I am referring to that region because that is where we are involved at the moment. The problem will be the same in the province of Quebec in the next decade, in the maritimes, and so on.

Mr. Harding: My question in terms of research is whether we have reached the stage where atomic power stations can compete successfully in price with hydro sites. Let us consider for example British Columbia. I understand that the costs of hydro are going up every year, wages and interest are up and so are building costs. Of course this puts the price of on-site power up also.

Mr. Watson: They are certainly getting very close. One very important thing to remember is that the larger the nuclear power station is the relatively cheaper it is. One can think of a nuclear power station as being one which has a large number of fixed costs, such as the control system and so on. If you can double the capacity of a nuclear power station you do not necessarily double the costs. Therefore the bigger the station gets, relatively speaking, the cheaper is the power that comes from it. This is one of the things that is occurring now. Utilities in the world now want 500,000 kilowatts, 750,000 kilowatts or even a million kilowatts a year in increased capacity, whereas 10 years ago an increase of 100,000 or 200,000 kilowatts was considered to be very large. So nuclear power is coming in first in the areas where people can use large blocks. This would certainly be true in British Columbia.

Probably in the next decade when the existing rivers have been exploited and used, nuclear power will be cheaper. This is also the view of the B.C. Hydro.

Mr. Harding: I see you have made forecasts here.

Mr. Watson: These were the charts that Mr. Gray referred to last Tuesday night, so we circulated them around. One of them shows the annual generation of electricity in nuclear electric stations in the period from 1970 to the year 2,000 in Canada. From this you will see that initially there is a large increase in the province of Ontario. Later on the province of Quebec comes in, and still later the provinces in the maritimes. The other chart that was circulated shows forecasts of electrical power and its relationship to the consumption of electricity in Canada. I hope the charts are not too confusing. The first one has a scale on the left which is known as a logarithmic scale, in other words the scale is not uniform up the side. This is perhaps a scientific way of putting it but it is certainly confusing in relation to the other chart which is a straight linear scale on the side. This is the reason that one curve goes one way and the other curve goes the other way. They are essentially the same data.

Mr. Harding: Mr. Chairman, these are all the questions I had.

The Chairman: I want to thank Mr. Harding for mentioning these charts because I was going to ask Mr. Watson to discuss them with you. Mr. Gray promised them to us at the meeting last Tuesday night. If you would like to have a look at the full discussion concerning them, you will find it in the last committee report of Tuesday night.

Mr. Deakon: Mr. Chairman, my first question regards the cost of nuclear fuel as compared with the cost of coal-fired plants. I have had an opportunity to look up some material in the engineering journal which contained an article describing the low cost of nuclear fuel. Subsequently there appeared a reply which counteracted the statements contained in this article. The reply seemed to indicate that the statement is misleading and that nuclear fuel is cheaper. They claimed that the reason for that is that the low cost of the nuclear fuel is more than offset by the cost of the reactors, that is the heavy water moderated reactors using uranium. They claim that the cost difference is approximately \$200 per kilowatt greater than that of a coal-fired plant. Is this statement correct in your view?

Mr. Watson: I am not sure whether the difficulty here is centred on the words "cost of fuel" and what I think you mean by the cost of electric generation. When you are con-

sidering the total cost of the electricity sent out of any power station, whether nuclear or conventional, you must realize it is made up of three parts. One is the amortization of the capital cost of the plant, the second point is that there is the cost of operating and maintenance, and the third is the cost of the fuel which is burnt in the station. In the Canadian atomic station the fuelling costs are extremely low, the operating and maintenance costs are about the same as that of any other nuclear power station, and the capital cost of the station is a little above the capital cost of, say, the U.S. enriched type nuclear power stations—it is of the order of the cost of a hydro electric dam and it is nearly twice the cost of a coal-fired station.

So one has to consider fuelling costs of different types of stations, which will come in the following order: First, hydro electricity where fuelling costs are free as the source is water; second, the second lowest which is our type of uranium reactor; third, the enriched uranium reactor of the United States, and fourth, the cost of coal or oil or other fossil fuels. That is the order of the fuelling costs. On the other side, as I said, the capital cost of the coal-fired stations is the lowest, then you get the capital cost of the enriched reactors, which is considerably above it, then the Canadian type of CANDU capital cost which is a little above that of the enriched reactor system, and the cost of hydro electric dams which is marginally above our costs. So you have a fuelling range of costs in one order and capital costs in the opposite order.

Mr. Deakon: Considering all the costs you mentioned, would you please tell us which is the more economical fuel to purchase, that of a coal-fired plant or that of a nuclear plant.

Mr. Watson: So far as the cost of the fuel is concerned, the cheaper is the nuclear fuel. I am emphasizing now that I am referring to the fuel.

Mr. Deakon: But what is cheaper for the consumer ultimately?

Mr. Watson: That is the other question which pertains to the cost of electricity. In the cost of electricity you have to consider how much it costs to build the plant and the capital costs of the whole station.

Mr. Deakon: Would you consider the various costs and tell us which of the fuels is cheaper for the consumer?

Mr. Watson: This depends very much on the environment. One of the critical things is the cost of money to the utility that you are dealing with because if you have a public utility with a normal or a relatively low interest rate on your money, the amortization charges on a plant are very much less than if you have a private utility which charges much higher rates of interest and which has to pay for things such as taxes and shares. Surprisingly enough these sort of things make all the difference between which is the most expensive and which is not. These are the sort of things which tip the scales.

Mr. Deakon: Mr. Chairman, I should like to clarify one point further. I notice that in vote L 10 there is a considerable decrease in loans to Atomic Energy of Canada Limited for purchases of heavy water for retail to Canadian and foreign users. This would seem to imply that there is some real purpose in this. Perhaps it is more expensive than for coal-fired power. Otherwise why do they reduce this so greatly? The reduction here amounts to \$5,900,000.

Mr. Watson: The answer to the question is that there is a delay in the production of this heavy water which was to be produced by Deuterium of Canada Limited. Under the original agreement the delivery was to start in July, 1966. To date we have not had any heavy water from them. So the reason this number is lower is simply that we have no product to buy. We are unhappy about it, as I am sure Deuterium of Canada is, but it is a fact of life that heavy water has not come out of this plant yet.

Mr. Deakon: Can the witness tell us how many agencies are receiving the grants referred to in vote 60? I see there is an increase of close to one and a half million dollars—those are grants for research.

Dr. Laurence: There were about 11 or 12 grants from the Atomic Energy Control Board last year. They are listed in one of the attachments we submitted; eleven is correct.

Mr. Deakon: Which agency received the biggest grant, and what is the amount of the grant?

Dr. Laurence: The biggest one listed is for the physics department of the University of Saskatchewan which received \$481,000.

Mr. Deakon: What are they doing?

Dr. Laurence: That money went in part for the completion of a 140 NEV linear electronic accelerator, which has been purchased by the federal government, to start off the mission; for equipment and for laboratory supplies associated with its use and other operating expenses. The particular class of research investigation which is being carried out with this equipment is studies in nuclear structure and the interaction of high energy electrons. It is a study of what happens to the atom, the kind of information which is the basis of our atomic energy activities.

Mr. Deakon: I have just one more question.

The Chairman: Your time is up, but I will allow you one more question.

Mr. Deakon: The last question I wish to ask is, is there any agency at present studying the problems of cladding and alpha? What are these problems?

Dr. Laurence: I beg your pardon. I did not hear the last part of the question.

Mr. Deakon: Is there any agency which is receiving a grant from you or from the commission for the purpose of studying this problem of cladding and alpha which exists in connection with atomic energy?

Dr. Watson: I do not understand the "alpha". Cladding is the sheath which you put on the outside of your fuel into the nuclear reactor. We in A.E.C. have spent considerable sums of money on research and development in contracting with Canadian industry to improve cladding of the fuels that go into Canadian reactors. I am not sure what the words were after "cladding".

Mr. Deakon: I don't know what it is either, so I am asking.

Dr. Laurence: I wonder if the words might be spelled?

The Chairman: Mr. Gilbert.

Mr. Gilbert: I was not at the last meeting, so I feel very much like a person walking into a dark room. However, I am going to proceed on the basis that the less you know of a subject the less inhibited you are about asking.

Dr. Watson: That is a fair assumption.

Mr. Gilbert: I should like to direct your attention to page 8 of the brief that was submitted to the Senate committee studying

science policy in Canada. Paragraph 20, Mr. Watson, reads:

"The board, owing to its concern for protection of the public from the hazards of radiation exposure, is particularly aware of the need for the extension of scientific knowledge in regard to some of the biological effects of radiation, the uptake of radioactive contaminants in rivers and lakes by plants and animals, the retention and localization in the human body of particular radioisotopes that have been inhaled or ingested, and other relevant questions."

Recently one of the members in the house, Mr. Watson ...

Mr. Watson: I think you are reading from Dr. Laurence's Atomic Energy Control Board brief; it is not an Atomic Energy of Canada brief, so Dr. Laurence will be answering your question.

Mr. Gilbert: Fine are you with me in what I have said?

Mr. Laurence: Yes.

Mr. Gilbert: Recently one member brought forward a problem in the house concerning a farmer who had a successful chicken operation. As a result of radiation, which he claimed came from these high relay towers, his chickens died and he had a subsequent loss of over \$100,000. Last week in the house his member mentioned studies that were being conducted in the United States under Senator Magnusson, I believe he said, basic to this problem of radiation and other fields. I should like to know just what you are doing in this field, and perhaps you could give a brief summary.

Dr. Laurence: I think the reference here is to a different kind of radiation, that is radiation which is produced by certain types of electronic equipment which is more akin to radio radiation. This is not the kind of radiation to which the text quoted refers. We are concerned only with radiation which is emitted from the nuclei of atoms.

Mr. Gilbert: Have there been any biological effects of radiation in rivers, lakes, on plants or animals? What has been your experience?

Dr. Laurence: There has been no evidence of an incident of that kind in Canada.

Mr. Gilbert: Page 9 of the brief to which I have referred contains this statement:

"Examples of studies of this kind are the survey of the movements of water in lake Huron close to the Douglas Point nuclear power station conducted by the Great Lakes Institute under contract to Atomic Energy of Canada Limited."

What have been the results of these experiments?

Dr. Laurence: These experiments are still being conducted. We are endeavouring to obtain information which could guide us in judging the possibility of any hazard connected with the operation of the power station located there. There has been no indication whatever, if that is the point of the question, that there is a real hazard.

Mr. Gilbert: When do you hope to complete that study?

Dr. Laurence: I think it has progressed far enough now that we are confident of the results. There will be a continuing watchfulness on the possible effluents from this spot to make sure that the effluents are not dangerous.

Mr. Watson: I am not sure if I should say something now because I am not sure if you are both saying the same thing. Certainly, so far as radiation from nuclear energy is concerned, that type of radiation is well known to be dangerous. One of the functions of the Atomic Energy Control Board is to make sure all of us in Canada need not fear this and so the regulations which are issued are a protective measure when they are carried out to make sure that there are no hazards to Atomic Energy workers or to the public. Some of the studies which are going on are part of the testing phase. I thought you originally asked, was there any hazard, was there any danger? Certainly, in theory, there is a danger and the protection is the protective measures that are taken.

Dr. Laurence: May I put that a little differently, Mr. Chairman, by saying there would be a danger if we did not take the proper precautions to avoid the danger?

Mr. Watson: That is what I meant.

Mr. Gilbert: You say the chicken case does not come within your jurisdiction?

Dr. Laurence: That is correct.

Mr. Gilbert: May I again direct your attention to page 12 of the brief?

Dr. Laurence: Again, of the submission to the Senate?

Mr. Gilbert: Yes it is about a third of the way down the page:

"Although AECL has made great efforts to assist private industry in building up research and development competence by contracts, and by encouraging some of the best of its own employees to find employment in the companies concerned, private industry in Canada has hesitated to establish research organizations suitable for nuclear energy problems."

Then, there is this statement:

"It appears that the financial resources of government are needed to provide for very large investment in research and development where there are such very large fluctuations and irregularities in financial returns."

What you are really saying is that the federal government cannot go it alone, then, in research development and I should like to have a few comments from you on this matter.

Dr. Laurence: Rather, the point was that industry cannot go it alone in this field because the ups and downs of the income are so great that it is very difficult for them to maintain and attract confidence, both in the research and development sides. The purpose was to call attention to the difficulties which arise in connection with research and development in industry, particularly in this industry where unit costs are so high that there is difficulty in keeping a research organization together between contracts.

Mr. Gilbert: What is the proper approach to this problem? You mean to suggest we are assuming that it is too expensive for private industry to do it alone, so what incentives, if any, should the government give?

Dr. Laurence: This is a difficult problem, Mr. Chairman, and I am not sure I know the answer. My purpose was just to raise it, to bring it to the attention of those who are interested.

Mr. Watson: Again, I am not sure whether I should not interrupt on this one. I think there is a difference between research and development to carry out the whole of your

atomic energy and atomic power programs as distinct from research and development on the components that go into that program. Now, those are orders of the magnitude and the difference in the cost of developing a new nuclear power station, which costs a lot of money and certainly at this stage there is not that sort of return from that business for private industry or individuals with that sort of money. If, on the other hand, you are talking about getting a better pump or a better motor for this station, then this is an area in which we certainly feel private industry should be spending its money to improve its product, as part of the whole scheme of things. Then, my view, we in A.E.C.L. are trying to do that. We spend something like \$6 million or \$7 million a year on research and development contracts in industry. We feel that these are the lines along which they can do their own research and development in the future for the nuclear power stations of the future.

Mr. Gilbert: I should like to read one more sentence from the brief:

"The laboratories of the Bell Telephone Company and the General Electric Company have produced many examples of achievement in basic science. The Ford Motor Company is also becoming very active in fundamental research. Fundamental scientists were the first to see the possibilities of application that led to atomic energy, high speed computing devices, transistors, etc."

Now, the question that comes to my mind here is that we have companies like the Bell, General Electric and Ford, who are big companies, and they have research and development programs. How do they fit into this program? What is their response and what is your response to them, if any, with regard to development or research programs?

Dr. Laurence: The references there, Mr. Chairman, were to the United States companies and the research programs in the United States. I mentioned them as examples of big corporations which are supporting fundamental research very heavily. I was thinking of the United States companies, but I am not sure I understood the question.

Mr. Gilbert: This is really the crux of the problem, is it not? The big companies are located in the United States, and they are feeding the results of this research into their branches in Canada. This has put Canadian

manufacturers in an awkward position with regard to research. The problem then falls on the government to take action.

Mr. Watson: Yes.

Mr. Gilbert: I am wondering what if anything we can do about the problem. That is the reason I look to a man like you for advice.

Mr. Watson: That is what we have Senate committees and science councils for.

Dr. Laurence: I think it should be said that there is very good work going on in Canada in certain areas. I would refer notably to the Northern Electric Company.

Mr. Gilbert: Thank you, Mr. Chairman and gentlemen.

The Chairman: Mr. Moores.

Mr. Frank Moores (Bonavista-Trinity-Conception): My first question, Mr. Chairman, is directed to Dr. Laurence. I notice there are 11 universities which have qualified for grants. Is there any duplication of projects within the universities?

Dr. Laurence: Mr. Chairman, I often wonder how you get duplication in research. Research is a type of search and two researchers are more likely to find something than one alone. I am never quite sure what is meant by the question of whether there is duplication in research when the question is put. Good research people try to avoid duplication for a very good reason. They are very concerned about their reputation for originality and new discovery. If they are aware that another man is in pursuit of a certain question they will tend to avoid it. A certain amount of duplication, however, is desirable because it gives confirmation to something which may be so new and spectacular that people may be a bit sceptical and wonder whether some mistake has been made.

Turning specifically to the question I would say, no; there is very little duplication mainly for the reasons I have mentioned.

Mr. Moores: Having in mind these 11 universities, what is the system or criteria under which these universities qualify for research grants? Why are there 11? Were others turned down and these chosen, or what is the situation?

Dr. Laurence: They submit applications to the grant awarding body, either the National Research Council or ourselves. Sometimes they go to one and sometimes to the other. These applications are reviewed by committees of experts in the field. These committees advise the grant agency of the methods and usually recommend specific amounts. These recommendations are considered in the light of the funds available. That is the basis on which the decision is made. It depends on the judgment of people who are experts in the field.

Mr. Moores: But it is by application from the universities to one council or another?

Dr. Laurence: Yes.

Mr. Moores: I should like to return to the subject of the agreement with France with regard to heavy water expertise in respect of which I think it was agreed that the Canadian expertise in this field is greater than anything we would gain from the French. At the time it was mentioned this was to be a five year agreement. I understand that if France should use any of our heavy water knowhow, then the Canadian industry would have the opportunity of providing the commercial installation. Is that correct?

Mr. Watson: No, this is not quite correct. First of all, the basis of the agreement was that the balance above need should be the balance from now onwards. It was a quid pro quo arrangement.

Mr. Moores: So far as the agreement is concerned I understand that it involves an exchange of technology rather than details, drawings or designs of a particular nuclear power station. Therefore, under this agreement Canada will not be shipping to France the complete drawings, let us say, of the Pickering nuclear power station if they decided to go ahead with a particular operation.

Mr. Watson: If they should decide to build a natural uranium heavy water nuclear power station of their own they could, of course, as of now even before the agreement decide to do that without any reference to Canada. It might not be as good a nuclear power station as we would have liked to see or could have helped them make, but there is nothing to stop them. Equally there is nothing to stop them building a nuclear power station in the next five years. We would hope, first of all, that if and when they make a decision to do so they will consider that it would be in their

commercial interests to say, "Well, if we want such and such a component here is a Canadian company X which has already built several of these for the Canadian program, would it not be better to make a commercial deal to buy the component from Canada rather than set up a firm in France to build a similar one".

Mr. Moores: It is fair to assume, in other words, that there is nothing in the agreement which gives Canada or Canadian companies any first call other than that this would be normal commercial practice.

Mr. Watson: That is correct.

Mr. Moores: The other question is in respect of the generation of electricity in nuclear electric stations. I am wondering what the basis is for the information and your projection in this regard. How much has this been researched?

Mr. Watson: This is the best information we can obtain from talking to the provincial electric utilities people plus other people who are studying natural energy costs and trends. The story, for instance, so far as Ontario is concerned is that the figures up past 1980 are those of the hydro people themselves. The remainder are projections that are made by organizations like the Canadian Nuclear Association and the World Power Conference. There are all sorts of interested atomic energy bodies as well as atomic energy organizations that are doing projections of this type. It is not an A.E.C.L. projection.

Mr. Moores: Particularly in respect of the limited area shown here on the graph I am wondering whether or not the potential Bay of Fundy development would have been taken into the picture and the forecast.

Mr. Watson: Quite frankly I do not know the answer to that question. I would assume with this graph here that there is an assumption there will be a greater intertie between the provinces than there has been and that once the provinces are linked together there will be a capacity size which would then make it much more attractive to put in a large nuclear power station than if there were a number of small grid systems.

Mr. Moores: I think that is all, Mr. Chairman.

The Chairman: Mr. Ritchie.

Mr. Gordon Ritchie (Dauphin): Mr. Chairman, if I may be a little facetious I should like to say that I wish the Atomic Energy Control Board would look after the chickens. We have been hearing about them for a long time and no one seems to know why they are dying. Perhaps the Atomic Energy Control Board would undertake that as a project. I notice in vote L15 that you are involved in building the transmission line for the Nelson River power project. I gather that this is somewhat unusual. Are you in the habit of being involved in this type of thing?

Mr. Watson: This is very unusual. This is outside the normal responsibilities of Atomic Energy of Canada Limited. This is an arrangement made between the federal government and the province of Manitoba by which the federal government would finance this transmission line from Kettle Rapids down close to Winnipeg. That is, the federal government would be responsible for the design, construction and leasing of the power line to Manitoba hydro with a pay-back to the federal government over a number of years. Therefore, the federal government then had on its hands the job of getting somebody to carry out its responsibilities. We are not quite sure why somebody came along to us and said, "A.E.C.L. please do this", or "Do this." We could perhaps make some guesses. We do not become very frightened about spending \$170 million. However, it is necessary that there be an item for this in the estimates to authorize A.E.C.L. to carry on this activity. You are quite right that this is completely outside our normal jurisdiction.

Mr. Ritchie: How are the fire ashes or whatever you call them that come out of nuclear reactors and so on disposed of? Could you give us a brief idea?

Dr. Laurence: They are at first stored for a period where they can be directly observed. This involved a matter of some months. I had better correct that statement. There are different practices in different places. Most of the waste material from the reactors in Canada at the present time is in indefinite storage. It may very well in the future be processed to recover plutonium from it. When that occurs there will then be a radioactive waste which will have to be disposed of in some way. Some of it might be used for certain purposes as a source of radiation for treatment of vegetables and so on to preserve them. Things of that kind are involved in research.

A good deal of it, however, will have to be disposed of in some other way. It is stored in places in the ground where there is practically no possibility of it causing serious contamination to the rivers and lakes. As a further insurance against this it is treated in a way which inhibits the corrosion of these materials by the underground water to prevent it from easily going into solution in underground water. These storage areas are in regions where they are protected from access by the public. These are government operated storage areas.

Mr. Ritchie: I have one final question, Mr. Chairman. I gather that there is some talk that perhaps there should be a return to indigenous science research or so called basic science research versus applied science research. Is this the sort of argument or discussion that is going on at the moment? Is there some discussion or some difference of opinion, as there always is, in respect of this sort of thing; is it the opinion that perhaps it now is time to return to more basic science research?

Dr. Laurence: Mr. Chairman, the matter of the support of research particularly in industry is very much under discussion in Canada at the present time as members know. This is a matter of much discussion in the Senate committee inquiring into research and in the press. The emphasis has been on discussions about government support of research advance or the fact that Canada is not giving essential support to applied research in industry as is the case in other advanced industrial countries or in proportion to the gross national product or any other convenient yardstick.

My brief to the Senate committee made reference to this in an effort to express our concern that in the emphasis on applied research fundamental research might be neglected. The point we were trying to remind them of is that the two are interdependent. They live together. It is a kind of symbiosis, if you like, to borrow a word from the biologists, where one prospers and the other is also supported, with the present emphasis on applied research and particularly applied research in industry. One should not forget its emphasis, in turn, on fundamental research.

Mr. Watson: Just to confuse you, Mr. Ritchie, in our brief to the Senate our comment was that there happens to be a lot of popular interest in getting more research into industry and universities, and we said do not forget

the research in the federal government because this is also very important.

Mr. Roy (Timmins): Mr. Watson, in view of the announcement of the French government of its heavy curtailing of atomic development—I think it was for armaments or bombs—and that there was a very heavy cut-back, I think last week, due to their economic difficulties, will this disturb the balance you have negotiated in the agreement of which we spoke at our last meeting?

Mr. Watson: I would think it would have no connection whatever. The area of curtailment of expenditures by France, as I have seen in the press, was that they were going to abandon some atomic bomb tests in the Pacific. These bomb tests are very expensive because you have groups of people, ships, instruments, and so on to test how effective is a nuclear weapon.

The sort of area of co-operation we have is with a completely different team of people in the French atomic energy commission. I have heard no suggestion, and would be very surprised if there was such a suggestion, that any of the staff there would be laid off or curtailed in their activities or anything of that sort. So I am very confident in saying that the answer is it will have no effect on our relationships or on the return we get for what we are providing them under the agreement.

Mr. Roy (Timmins): Thank you.

Mr. Chappell: Mr. Watson, I hope to direct some of your research funds to helping what I believe is one of Canada's most important research projects in fuel. I might say that I asked your deputy minister by letter on November 14 for the detail of each item of research or research investigation so I would have some idea where the money is going. I do not have that information yet, so I cannot be too specific in making suggestions.

At the University of Toronto aerospace institute they are carrying out research into producing electricity from heated gas. The gas with which they start is from a jet or rocket blast. I understand, and correct me if I am wrong, that the efficiency obtained from using coal is perhaps only 25 per cent to 30 per cent. Is that approximately correct?

Mr. Watson: It would be in that order.

Mr. Chappell: They hope to be as efficient as 57 per cent with this project. I understand,

further, that this is the only such project in the world; therefore, if it works Canada would be the leader. They were supported by the Defence Research Board but that support has now been withdrawn. They have been financed to the extent of \$200,000 and have there a huge machine, which I saw some weeks ago, with which they heat the gas and draw off electricity. They have another huge affair outside which is almost as big as a silo.

They made a submission to the National Research Council, which has not been adopted. What they really desire is to be adopted by Atomic Energy of Canada. They have the equipment. They are well into the research. Recently they drew off enough electricity to keep an electric light bulb going. They think that with research this efficiency can become a real thing. Their operating costs are in the nature of \$25,000 to \$30,000 a year.

My question is: Would you look into this matter, please, and see whether possibly your department can come to the rescue and perhaps adopt them?

Mr. Watson: Atomic Energy of Canada Limited, Mr. Chappell, does not grant assistance to universities or anyone else for projects that have been originated by outsiders—by the universities or outsiders.

Mr. Chappell: You mean that this is the case if somebody has a good idea, no matter how good it is?

Mr. Watson: It makes no difference whatsoever to us. We in A.E.C.L. are not in the business of supporting outsiders. We are only in the business of carrying out our own program. There are other agencies of the federal government that are set up to do this.

Our directors have taken the line that this is the proper approach for a crown corporation. It should carry out its own functions as best it can, and leave these matters to the other agencies which are set up to provide funds.

Mr. Chappell: When you say A.E.C.L., you are the proper person to ask about this matter, are you not? If anybody has the money, it is you, is it?

Mr. Watson: No.

Mr. Chappell: I mean it is you out of the Atomic Energy people. It is not the control board; it is you?

Mr. Watson: No; the Atomic Energy Control Board have the money for grants in aid of research.

Mr. Chappell: They cover this?

Mr. Watson: You asked Dr. Laurence this question earlier this morning. We do not have any money to support work originated by universities.

Mr. Chappell: It is the control board?

Mr. Watson: The control board has funds for this purpose.

Mr. Chappell: They do?

Mr. Watson: Yes.

Mr. Chappell: All right. Then perhaps I could direct my question to Dr. Laurence. Dr. Laurence, would you look into this matter, please, and see whether funds can be made available to assist this project?

Dr. Laurence: If the submission is made to our board, we will certainly give it careful consideration. I would point out, however, that we as a matter of policy only interest ourselves in research which is related in a fairly close way to atomic energy.

When the questions were put to me earlier, I regret that I did not clearly understand the nature of the investigation that was under consideration. I thought, when I was answering the questions earlier, that it related to research in plasma physics, which is closely related to atomic energy. But it appears this is not so. As I now understand the description of the process, it is a more direct means of conversion of heat and electrical energy into electricity, in a discharge.

Mr. Chappell: I would appreciate it if you would keep your answers as short as possible, Dr. Laurence, so that I may finish my questions on this subject.

Dr. Laurence: To be brief, Mr. Chairman, as I understand the nature of the investigation, it is not in the atomic energy field, so it is not one we could be very helpful on.

Mr. Chappell: I understand that while experimenting it is reasonable for them to use electricity rather than set up a small atomic plant. Once it becomes efficient they expect to use an atomic plant. I am wondering who would help finance them at this stage until the process is developed where they can go to the expense of atomic energy.

Dr. Laurence: It would seem that the atomic energy to be used in this process would be merely in the using of power derived from atomic energy, for a particular purpose. That is not research in the field of atomic energy. However, I return to the point I made before, Mr. Chairman, that we would be very glad to consider the proposed investigation and see whether it is something in which we could be of assistance. If it is not in the field of atomic energy, then of course it would not be consistent with our practice.

Mr. Chappell: So I may be clear, does that mean they have to start experimenting by using atomic power for their heat immediately? They eventually expect to use atomic power rather than electricity, when they go commercial.

Dr. Laurence: Yes, but that is not part of the research investigation. It is not research in atomic energy, if that is the case, because the atomic power is being used merely as a means of providing the necessary energy.

Mr. Chappell: One last question. Dr. Laurence. Can you give me any help in this regard? If these people cannot obtain funds from the National Research Council, to whom might they apply?

Dr. Laurence: The National Research Council would certainly be the most appropriate place to which to apply. I cannot at the moment think of anyone else, unless it has a defence purpose.

Mr. Chappell: No; they have withdrawn.

Dr. Laurence: Then they have decided it has not a defence purpose.

Mr. Chappell: No, it is not that they have decided against it, but for their own reasons they have withdrawn funds in this field.

Dr. Laurence: I see. I have no other suggestion to offer than the National Research Council.

Mr. Watson: Mr. Chappell, I think when you referred to the deputy minister you meant the Deputy Minister of Energy, Mines and Resources. We do not, of course, come under him. But it is certainly an appropriate government department to write to in this area, as I understand the problem.

Mr. Chappell: Perhaps I am mistaken. Under what government department do you fall, or are you completely separate?

Mr. Watson: We do not come under a government department. We report to the minister designated under the Atomic Energy Control Act, and he happens to be the Minister of Energy, Mines and Resources.

Mr. Chappell: I accept your correction. I understand it now.

Mr. Watson: But we are somewhat sensitive to the suggestion that we come under his department.

Some hon. Members: Oh, oh.

Mr. Chappell: In any event, neither of you gentlemen can help out in regard to this project?

Mr. Watson: I am sorry, I cannot. I have no money.

Mr. Gilbert: Mr. Chairman, I would like to switch from adoption problems to human problems and get back to Dr. Laurence on the hazards of radiation exposure. In this respect we have had a tremendous experience as a result of the dropping of the bombs on Hiroshima and Nagasaki, and I am sure you have data which shows the effects of radiation exposure on the Japanese people and the effects it has had on the contamination of waters there. We have had an experience with regard to bombs dropping in the Mediterranean and the one off Greenland which was recovered before damage was done.

We are now entering into the stage of signing a non-proliferation agreement in the United Nations. Where does Canada fit into the scheme of things, (a) with regard to the non-proliferation agreement, and (b) what can the average Canadian do to protect himself against possible radiation? People say we should be building radiation-proof shelters, and so forth. It seems to me we are in the hands of the scientists rather than the hands of the politicians. I wonder whether I could have a few comments from you, sir.

Dr. Laurence: Mr. Chairman, there were several parts to that question and I am in a little of a quandary as to where to begin.

The Chairman: Mr. Gilbert is not known as a ten-minute educator.

Dr. Laurence: With regard to the non-proliferation treaty, a decision has not yet been reached by our government, so I am in no position to comment with regard to its application.

So I am not in a position to comment on that. The question was raised as to whether we have information about the effects on people of the bombing in Hiroshima. This is a matter of record. We have access to that information. Would you mind repeating your question?

Mr. Gilbert: What I am saying is that you have this data and you are exercising a control with regard to radiation exposure. What can the average Canadian do to protect himself? Some people talk about building shelters. So far as I know, there has been no program in regard to shelters. Have you any suggestions about what Canadians can do to protect themselves from radiation?

Dr. Laurence: First of all I trust the need for shelters is not going to arise in circumstances related to atomic warfare. I hope that the controls which we are exercising in the peaceful uses of radioactive material are giving the public the protection which justifies them in feeling they are secure and safe. Of course that does not mean that mistakes cannot be made and that a man might not expose himself to radiation if he ignores the regulations. But under normal circumstances the public in Canada I think is quite safe from the radiation hazard. I wish I could feel that the public in Canada was also safe from other effects of other hazardous materials.

Mr. Gilbert: Such as what, Dr. Laurence?

Dr. Laurence: For example, there is the contamination in our rivers and lakes. That has been mentioned frequently. There has also been some mention of radioactive materials in this connection. I would say that the hazards from radioactive materials as a contaminant in our rivers and lakes is of negligible importance compared with other things that are put into the rivers and lakes. This is the kind of thing I mean.

Mr. Gilbert: Thank you very much.

The Chairman: Shall item 55 carry?

Some hon. Members: Agreed.

Item agreed to.

Items 60, 65, 70, and 75 agreed to.

Items L10, L15, and L20 agreed to.

The Chairman: I should like to thank the officials of Atomic Energy of Canada Limited and the Atomic Energy Control Board for appearing before this committee. I would also like to commend the members of this committee who, in short order, have come up with some very good questions. I am sure that when these various crown corporations appear before us in the future you are going to have a chance to do more research. I am very pleased with the way the committee is going as a whole and I want to commend the members on that.

I want to ask Mr. Watson to officially thank Mr. Gray for us because I believe our meeting had adjourned on Tuesday evening before I fully realized he would not be with us today.

Mr. Deakon: Would it be possible for the members of the committee to visit one of the plants sometime in the future?

The Chairman: This has already been discussed by your steering committee, and I can assure you that your chairman is wholeheartedly in sympathy with this.

Mr. Watson: You will be most welcome.

Mr. Gilbert: We hope we will be protected against radiation.

Mr. Watson: I can assure you there is no fear of that.

The Chairman: I would like to put a question of procedure before the committee before members leave this morning. I understand there will be a great shortage of committee rooms on December 10 because of the conference that is taking place here. I wonder if the committee would be willing to sit three times next week, if we can get the space to do so, because we still have the National Energy Board, the National Research Council and the Joint International Commission to see. If we can get them in on these three meetings it will at least give us a chance to have them before us.

Some hon. Members: Agreed.

The Chairman: We will instruct our committee clerk to go ahead and arrange these three meetings.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament
1968

STANDING COMMITTEE

ON

**NATIONAL RESOURCES
AND PUBLIC WORKS**

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE
No. 11

THURSDAY DECEMBER 5, 1968

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources

Including

1. SECOND REPORT TO THE HOUSE
2. INDEX TO REPORTS
3. INDEX TO WITNESSES
4. INDEX TO APPENDICES
5. INDEX TO EXHIBITS

WITNESSES:

From the National Energy Board: Dr. R. D. Howland, Chairman;
and Mr. H. L. Briggs, Member of the Board.

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

Beaudoin	Lind	Moores (<i>Bonavista-</i>
Chappell	Gilbert	<i>Trinity-Conception</i>)
Code	Harding	Paproski
Comeau	³ Hogarth	Ritchie
² Crossman	⁴ Mahoney	Roy (<i>Timmins</i>)
Deakon	¹ Marchand (<i>Kamloops-</i>	Sulatycky—(20).
Downey	<i>Cariboo</i>)	

(Quorum 11)

J. H. Bennett,
Clerk of the Committee.

¹ Replaced Mr. Breau on November 29, 1968.

² Replaced Mr. Weatherhead on November 29, 1968.

³ Replaced Mr. Badanai on December 4, 1968.

⁴ Replaced Mr. Penner on December 4, 1968.

ORDERS OF REFERENCE

HOUSE OF COMMONS

FRIDAY, November 29, 1968.

Ordered,—That the names of Messrs. Badanai and Marchand (*Kamloops-Cariboo*) be substituted for those of Messrs. Lessard (*Lac-Saint-Jean*) and Breau on the Standing Committee on National Resources and Public Works.

Ordered,—That the names of Messrs. Breau and Crossman be substituted for those of Messrs. Langlois and Weatherhead on the Standing Committee on National Resources and Public Works.

WEDNESDAY, December 4, 1968.

Ordered,—That the names of Messrs. Hogarth and Mahoney be substituted for those of Messrs. Badanai and Penner on the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER,

The Clerk of the House of Commons.

REPORT TO THE HOUSE

THURSDAY, December 5, 1968.

The Standing Committee on National Resources and Public Works has the honour to present its

SECOND REPORT

Pursuant to its Order of Reference of Wednesday, October 16, 1968, your Committee has considered the following items listed in the Revised Main Estimates 1968-69.

Items 15, 20 and 25, relating to Mines, Minerals, Energy Geosciences.

Items 40, 45 and 50 relating to Water and Coordination of Renewable Resources Programs.

Items 55 and 60 relating to Atomic Energy Control Board.

Items 65 and 70 relating to Atomic Energy of Canada Limited (Research Program).

Items L5, L10, L15 and L20 relating to Atomic Energy of Canada Limited.

Item 75 relating to the Dominion Coal Board.

Item 85 relating to the National Energy Board.

Your Committee commends the above items to the House.

A copy of the relevant Minutes of Proceedings and Evidence (*Issues Nos. 1 to 11 inclusive*) is tabled.

Respectfully submitted,

LEONARD HOPKINS,
Chairman.

(Text)

MINUTES OF PROCEEDINGS

THURSDAY, December 5, 1968.
(11)

The Standing Committee on National Resources and Public Works met this day at 11.12 a.m. The Chairman, Mr. Hopkins presided.

Members present: Messrs. Beaudoin, Chappell, Crossman, Deakon, Downey, Gilbert, Harding, Hogarth, Hopkins, Hymmen, Lind, Mahoney, Marchand (*Kamloops Cariboo*), Moores (*Bonavista-Trinity-Conception*), Ritchie, Roy (*Timmins*), Sulatychy—(17).

Also present: Messrs. Alexander and Woolliams, Members of Parliament.

In attendance: From the National Energy Board: Dr. R. D. Howland, Chairman; Mr. H. L. Briggs, Member of the Board; and associates.

The Chairman introduced Dr. R. D. Howland, who introduced his associates.

Dr. Howland addressed the Committee and assisted by his associates was examined on National Energy Board's work and policy.

It was agreed that a set of statistical tables be attached to today's Minutes of Proceedings and Evidence as *APPENDIX "C"*.

It was agreed that the Items of the Revised Main Estimates 1968-69 approved by the Committee up to and including today's meeting be reported by the Chairman as its *Second Report*.

After further examination, the following item was *approved unanimously*:

E—NATIONAL ENERGY BOARD

Item 85—Administration\$1,602,000

At 1.05 p.m. the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Thursday, December 5, 1968.

The Chairman: Gentlemen, I see a quorum and I call the meeting to order. I would like to ask for some guidance and consent from the Committee. As you know, we stood Items 1 and 5 of the Department of Energy, Mines and Resources until the Minister could appear before us. But it is now quite obvious that the Minister will not be able to appear before this Committee before the Estimates have to be returned to the House. So I would like to ask consent of the Committee to consider the passage of Items 1 and 5 in the Committee after we finish with the Crown corporations, and any additional remarks that anyone would like to make on Items 1 and 5 could be said in the House when those Estimates come up, if this is agreeable.

Agreed.

The Chairman: Thank you. I shall now call Item 85 on page 71 relating to the National Energy Board.

DEPARTMENT OF ENERGY, MINES AND RESOURCES

E—NATIONAL ENERGY BOARD

85 Administration..... 1,602,000

I would like to introduce Dr. R. B. Howland, Chairman of the National Energy Board, and before he addresses the Committee I will ask him to introduce his associates. Dr. Howland.

Dr. R. B. Howland (Chairman, National Energy Board): Thank you, Mr. Chairman. Gentlemen, I think it is very appropriate that the members of the Board are here today. On my right is Mr. D. M. Fraser, the Vice-Chairman. Mr. Fraser is a graduate of the University of Manitoba, and has been engaged in economics, partly privately and partly with the government. He has been with the Board since 1959. His particular responsibilities with the Board have related to gas problems, natural gas and financial and accounting regulations.

Mr. H. L. Briggs is a graduate of the University of Manitoba in electrical engineering. He has a great deal of experience in industry. He was

general manager of the Winnipeg Hydro Electric System, and later general manager of the British Columbia Hydro and Power Commission. You will appreciate that the Board leans considerably on Mr. Briggs' knowledge and experience in dealing with electrical power and energy matters.

Mr. J. Stabback is the newest member of the Board having been appointed on July 1 of this year. Mr. Stabback is a graduate engineer in chemical engineering from the University of Alberta. Most of you may know that he worked for many years with the Alberta Oil and Gas Conservation Board, and he was for four years chief engineer of the National Energy Board. He has served as a technical adviser on loan to the Government of South Australia, dealing with the evaluation of the occurrence of natural gas and the economics of transporting gas to markets in Australia. Mr. Stabback has become increasingly responsible in the past few months for oil policy matters.

Mr. Royer, fourth to the right, is a graduate civil engineer, with degrees from the University of Montreal and M.I.T. He has had a successful career as a consulting engineer, and has been with the Board since 1960. He deals particularly with transportation and the safety of pipe lines, and brings to his work not only technical knowledge but also his bilingual and bicultural qualities.

Mr. Chairman, also with me today is the Secretary of the Board, Mr. R. A. Stead, who has had extensive experience in government service, particularly with the Navy. Also with me today is Mr. Lamar, our legal counsel.

I have had great pleasure in introducing these members of the Board, first because it might be useful to you to meet them and, secondly, it will certainly be useful to the Board members to hear the views of this Committee.

Mr. Chairman, I understand that the members have received copies of our annual report. Last evening, thinking about this meeting with the Committee and our desire to be as helpful as possible to you, I looked over this report and felt that it might be a good starting point for these considerations today.

I think members will have gained an impression of a Board which covers a fairly wide range of

activities. I can assure members of the Committee that it is a very busy working Board.

I must say that in the last little while we have greatly missed the outstanding services of the former Chairman, Mr. I. N. McKinnon, who left a great gap in the Board. Not only was he capable in the fields covered by the Board, but he was an extremely hard worker. We sadly miss him.

Perhaps, Mr. Chairman, I might pursue one or two matters mentioned in that annual report. Members may have noted that Canada presented a paper to OECD on our experience with natural gas. Members will take some pride in this, inasmuch as European countries, having discovered substantial quantities of natural gas in the North Sea, sought Canadian experience in dealing with natural gas.

Of particular interest to them was the fact that the Canadian Parliament has set a gas export policy, and, secondly, that we had had the experience, in Ontario particularly, of an economy geared largely to oil, coal and electricity suddenly becoming the recipient of large amounts of natural gas from western Canada.

I mention this, gentlemen, because I would like to draw to your attention that the Consumers' Gas Company, in the person of William Kelly, made an outstanding presentation of their experience, as one of the large operating companies in Ontario, on how they adjusted to the influx of large volumes of natural gas. We got a very warm reception from European countries on this matter.

• 1120

Mr. Chairman, perhaps I should also touch on the matter of the Middle East crisis which is mentioned in the report. My comment on that is really restricted to saying that the National Energy Board was obviously very active in this situation of potential shortage and I am very pleased to report that the industry looked after that situation in Canada very ably. Moreover, Canada while receiving some considerable amount of oil from the United States in eastern Canada, sent to the United States and to the west coast substantially more crude than we received from the United States.

When one looks at this on the basis of tanker miles saved, the actual figures of exports are a gross understatement of the contribution which we made to the United States. I refer here, Mr. Chairman, simply to the fact that a tanker coming from Venezuela to Canada travels for so many days and so many miles, but if you take the alternative, to supply in the United States from offshore, these are coming many hundreds, even thousands, of miles further. So that the tanker-saving was, in fact, a very substantial contribution by the United States.

The Board makes mention in the report of the construction of the Trans-Canada pipe line through the United States—the Great Lakes project—and I am very pleased to advise the Committee that after having some travel through some troubled waters this line is, in fact, now operating and bringing gas into Canada.

I would also like to advise members that Inter-provincial's loop line through Chicago, the first stage of which is a line into that area, is nearing completion, and in fact, is beginning to receive line fill.

Perhaps members may also be aware of the recent discoveries of oil in the north, which could add a new dimension to the oil situation, not only in the United States but in Canada. I feel that the new optimism which is associated with these recent discoveries at Prudhoe Bay have given a great deal of encouragement to those who believe that this is not going to be limited to the Alaska area, but will extend into Canada; and it is also creating a fair amount of enthusiasm in those who are engaged in our offshore exploration, notably in the Maritime area.

Those are the comments that I felt might be appropriate to draw to the attention of the Committee. I now place myself at your disposal, gentlemen.

The Chairman: Thank you, Dr. Howland.

Before calling the first questioner, may I say, for the benefit of those who have not been here before, that at the original meeting of this Committee we decided to allot approximately 10 minutes of questioning to each member and then go on to another questioner. If anyone wishes to be placed on the second round I will take note of it at the end of the 10-minute period. This is to give others on the Committee an opportunity to ask questions, as well.

• 1125

An hon. Member: Mr. Chairman, at what time do you expect the Committee will rise this morning?

The Chairman: We hope to finish the questioning of this Board today so that we can have the International Joint Commission and the National Research Council before us next week. We have three meetings on Tuesday. It will, of course, depend upon the members of the Committee. We will not, however, be sitting later than 1 o'clock.

Mr. Woolliams: I would like to welcome the members of the Board. I appreciate having the opportunity to be here. I am not a member of the

Committee, but I am interested in the subject, as the Board will know. All members from the Calgary area are interested.

In your report you say that the Canadian oil industry had an excellent year in 1967. I presume and assume when you say "an excellent year" you mean relative to other years.

The industry itself, the independent oil companies and their organizations, does take the position that we are only producing 40 per cent of our possible production, taking into consideration the rules of conservation. Is that a fair assessment at the present time in Alberta, sir?

Dr. Howland: Yes; I think that is right.

Mr. Woolliams: There have been some suggestions by the Assistant Minister of Internal Revenue of the United States that there has recently been a cut-back in our quotas under our present national oil policy to approximately 10,000 barrels of crude petroleum per day. Is that a proper assessment?

Dr. Howland: I do not think so, Mr. Woolliams. The 10,000 does not ring a bell.

Mr. Woolliams: Perhaps I should put it this way. Has there been a cut-back in our quotas of exports to the United States under the national oil policy and if so, when did that come about and was it a unilateral decision made by the United States?

Dr. Howland: I have to be careful how I respond, as you can appreciate. I do not want to get into the political atmosphere...

Mr. Woolliams: I can assure you that I am not trying to be political; but I would like to know what the situation is.

Dr. Howland: No, Mr. Woolliams; I want to be as responsive as I can, because we value very much the relationship between the Board and the views of members of Parliament.

First of all, we do not have quotas between our two countries. We still have an overland exemption. We do have some responsibility on restraint, which has been recognized by succeeding governments. I think every member here would value highly the concept of overland exemption. This is still in operation. Succeeding governments have agreed to some measure of restraint. This has been said in the House.

• 1130

There was an adjustment in the last quarter of 1968, because in the first three-quarters of

the year there was an exceptional demand for Canadian crude, associated with the lack of pipe line facilities to meet market demand east of Superior. Upon the completion of the construction of the Chicago extension there was a need to adjust Canadian supplies to that situation. This was contemplated, and is typical of the discussions that have been a characteristic of governments here, where Canadian governments have sought to respect some of the interests of the United States as well as those of Canada. I am paraphrasing what ministers have actually said from time to time in the House of Commons.

Mr. Woolliams: I will put all my questions to you, but I will try to be brief and to the point. In the adjustment of the last quarter, compared to the other three quarters, what basically are we talking about in round figures in exports and in dollars and cents? A word like "adjustment" sounds very nice but it may be pretty economically difficult for the industry itself.

Dr. Howland: Quite frankly, I find that hard to respond to, Mr. Woolliams. In addition to some restraints in the levels of the last quarter I do not know how much line fill will be taken into that new line, but there is two and a half million barrels of new oil, which will not appear as export figures, that will be paid for and go into that line. So I cannot respond with accuracy. But there has been some cutback in the export levels to meet this situation. It is very fortunate that this coincided with an increased demand of the new pipe line for line fill. As you well know, you cannot pump oil through the pipe line until it is full, and this has assisted in the adjustment in this last quarter.

Mr. Woolliams: What prompted this question, was that some American officials spoke in Calgary and they talked about a cutback of approximately 10,000 barrels of crude exports per day into that area that we are talking about. Now surely there are some figures either to substantiate or deny that.

The next question that must follow is this: Was this done by an agreement with the Canadian officials—I am not referring to the Minister's level—or was it a decision made unilaterally by United States?

Dr. Howland: I would have to say that the adjustments were made with the knowledge of the Canadian Government.

Mr. Woolliams: Made with the knowledge, but was it with the consent? Did the Canadian Government or the Board or the officials in Canada agree to this cutback, did they agree to this adjustment,

or did the United States just say this adjustment had to be made. That is the point.

Dr. Howland: I really cannot respond to all of this. I can respond only to the extent that succeeding ministers have said that there is a continuous dialogue regarding the level—the flexibility here which they have sought to keep in these arrangements, and for this reason the mention of figures has always been avoided.

Mr. Woolliams: You mentioned dialogue. Was the dialogue as such one-sided to this extent; that the United States said—there is going to be a curback? Was that the extent of the dialogue? I think it really comes down to that—it was a unilateral decision of the United States.

Dr. Howland: Well, I cannot endorse that.

Mr. Woolliams: We are still bringing in approximately \$200 million worth of crude petroleum and products more than we are exporting. If those figures are not correct, would you give us the correct figures.

Dr. Howland: I think these are reasonably correct.

Mr. Chairman, I have in front of me a number of tables which include estimates by the Board. These tables may help to facilitate discussion. I have even estimates for 1968. You know, it is risky to make these kind of estimates. These are very informative tables, if the Committee are interested in them. One is a petroleum supply and demand balance for Canada from 1960 to 1968. This is a technical table but, if the Committee wish to spend a few minutes with me, I can give a great deal of information which will enable the Board to respond better to your questions than if we do not know what we are really mutually talking about.

If it is the wish of this Committee, Mr. Chairman, I would be glad to have a number of these tables distributed and then spend five minutes with you to explain what is involved in this whole situation. Is that satisfactory, Mr. Chairman?

• 1135

The Chairman: Thank you, Dr. Howland. Is it the wish of the Committee that this document be made an appendix to today's Minutes of Proceedings and Evidence?

Some hon. Members: Agreed.

Mr. Woolliams: Just before you deal with the tables could I ask you one question.

Do you agree with certain experts in the industry that we now may have reached a state in our petroleum economics—where it would be possible by pipe line to take a crude petroleum from western Canada—I am speaking of Alberta now—and pipe it into the Eastern Canadian market, where our imports are coming, and compete with the price of those imports of crude from Venezuela and elsewhere.

Dr. Howland: My answer is no.

Mr. Woolliams: Then you do not agree with those experts?

Dr. Howland: No.

Mr. Woolliams: Just before you go to the tables, what would be the price differential between, say, crude dumped into Montreal by pipe line and imported crude dumped as it is today into Montreal?

Dr. Howland: Mr. Woolliams, I do not think I could give you up to date figures. May I give you some reasons for saying no, that I do not agree with some experts—there are other experts who do not agree with the other experts.

I spent a couple of years with the Borden Commission, during which time we examined this case with great care. At that time, if my memory is correct, the Borden Commission's conclusions were that there would be a differential of somewhere between 15 and 25 or 30 cents. I cannot remember quite accurately, Mr. Woolliams, but there was a cost differential against Western Canadian crude being landed in Montreal competitively on a posted price basis. Since that time the general situation here is that Canadian crude oil has become more expensive. Fortunately for the producers in Western Canada, there has been over this period between 1958 and 1968 an increase of approximately 20 cents per barrel for Western Canadian crude. Now you have to generalize, which is what I am doing, Mr. Woolliams. The situation in Eastern Canada is that the general trend has been for lower international prices of oil as landed in Montreal partly because of the greater availability of international sources of oil and partly because of the large tankers. So if you agreed with a 15 to 25 cents figure then you would probably have to add another 20 or 25 cents. The general picture is a deterioration in the competitive position.

Mr. Woolliams: Let us put in figures that we understand. For a refined gasoline—such as is used in automobiles, what would it mean a gallon by taking the figures you have talked about—the differential in the price of barrels of crude petroleum. What would it likely mean to the refined price, say in the city of Montreal? I give Montreal as an example just so that we know what we are talking about.

Dr. Howland: Well, I think I know what I am talking about.

Mr. Woolliams: I know, and I agree. But to the consumer and the public what does it really mean—how many cents a gallon?

Dr. Howland: I do not know that we could measure how much more the Montreal Canadian would pay for his gasoline. Is that what you are asking me?

Mr. Woolliams: If we brought Canadian crude into Montreal costing 15, 20 or 30 cents per barrel more than import and that was refined into a gasoline used by an automobile what would it mean in cents per gallon to a consumer in the city of Montreal I would think you would have those figures because it is a matter of straight economics.

Dr. Howland: Mr. Woolliams, I do not have them. I told you I am not up to date on this Montreal situation. I also suggested that there may be consumers in the Province of Quebec who might not feel that that is the right yardstick. There are other users of petroleum products. One has to take into account the industrial user—and they are substantial users. If you are raising the price of your bunker fuel, which you must, you have to get your total cost out of the barrel, and you are going to raise, I would think, the whole structure of your cost. So I do not believe, frankly, sir that the yardstick of whether it would cost one or five cents per gallon to the driver in, say, the city of Quebec or Montreal is the yardstick one has to apply. It is one yardstick.

Mr. Woolliams: I just have one more question. Taking into consideration industrial users, taking into consideration users of gasoline for the ordinary automobile—all users, is there a formula that you could use to show what it would cost the consumer in cents per gallon in Montreal?

Dr. Howland: I think undoubtedly an individual refiner could tell you what his cost structure is going to reflect if you raise the price of his crude by 30 cents or 50 cents. I think that is quite easily done by a refiner.

Mr. Woolliams: You have not that information?

Dr. Howland: No sir, and it would not be meaningful until we asked individual refiners, because their operations differ.

Mr. Woolliams: Thank you very much, Mr. Chairman.

The Chairman: I let you go on a few extra minutes because I had nobody else on the list at the time.

Mr. Gilbert is next.

Mr. Gilbert: Dr. Howland, in your opening remarks you stated that the Trans-Canada pipe line, more especially with regard to the Great Lakes project, has been completed. Is that the completion to Sarnia, Ontario.

Dr. Howland: Yes. This is completed now and flowing.

Mr. Gilbert: And it goes to Sarnia.

Dr. Howland: That is right—Well, Sault Ste. Marie.

Mr. Gilbert: Sault Ste. Marie.

Dr. Howland: It goes to both Sault Ste. Marie and Sarnia.

Mr. Gilbert: What is the position of the city of Toronto with regard to the gas situation now and in the near future? Is there an adequate supply to the city of Toronto for its present and future use?

Dr. Howland: I think so. There is no evidence to the contrary. The applications made to the Board for the construction of that line and other developments by Trans-Canada all indicate that there are completely satisfactory arrangements regarding supply.

Mr. Gilbert: What proposals if any, have you to direct lines to Montreal?

Dr. Howland: There is a line there.

Mr. Gilbert: And is the supply adequate at the moment?

• 1145

Dr. Howland: Oh, yes. The Board does very careful work, Mr. Gilbert, in assessing a pipeline's application for construction of facilities.

The Board does receive detailed estimates and forecasts of markets relative to these hearings and it also does its own forecasts so that it can compare what it believes with what the industry believes.

Therefore, I think I can satisfy you that, in fact, we have no reason to be at all apprehensive about supply of natural gas in either Toronto or Montreal.

Mr. Gilbert: I notice that on page 28 of your report you say in the first paragraph:

Preparation of a comprehensive long-term energy forecast continued in 1967. This study is concerned with the Canadian supply and demand positions of the various forms of energy in domestic and foreign markets, having regard to a certain range of possible developments. The forecasts cover the period to 1985.

Could you give us a brief summary of what your forecasts show relative to supply and demand?

Dr. Howland: I cannot do that, but I can tell you that it is going to be published within the very near future; at least I hope it will be. It will be a staff paper, as against one by the Board. We are in the final stages of this report, which has involved the staff in discussions with the provincial authorities and with industry so that we make the closest approximation of what might happen in the future, taking into account local knowledge and the expertise of industry.

Mr. Gilbert: I see; it has not been completed.

Dr. Howland: It is near the completion stage. We are a little like an auditor. When he has been working on an audit for months he does not know how the audit is coming out until he puts his final figures together. That is just about where we are on this forecast.

Mr. Gilbert: Would it be reasonable to say that the Canadian demand will be well protected?

Dr. Howland: We have found no reason to believe that there is any problem of supply. Some of our problems relative to estimating supply have been caused by the difficulty of estimating export potentials. Again, with the vast resources we have in various parts of the country, the regional aspects of the study are rather more difficult than when one is looking at the whole of Canada.

Mr. Gilbert: Relative to these findings in the north that you mentioned, how long will it take to have a feasibility study to determine the cost, the supply and so forth?

Dr. Howland: We are dealing here with a very intricate matter. I will start, Mr. Gilbert, by saying that the American companies which have made discoveries are certainly very active at the moment in making feasibility studies on different forms of transportation and different routes. The newspapers say that they are contemplating having production out of there by 1971.

If you are talking about constructing pipelines in that area, they have to make some decisions fairly soon.

If you consider it more broadly, I think much of this potential development will spring forward rapidly in Canada if this winter or the near future brings some major discoveries on the Canadian side. At the present time we have hopes, but no drill holes.

• 1150

Mr. Gilbert: Dr. Howland, what is your relationship with the Federal Power Commission in Washington? Many Canadians are acquiring the attitude that when it sneezes Canada jumps.

Dr. Howland: Have you read our report on Westcoast?

Mr. Gilbert: No, I have not.

Dr. Howland: I recommend it to you.

Mr. Gilbert: Possibly you could summarize it for me in a few sentences.

Dr. Howland: This was a situation—and I must be careful with my words here—in which there was a somewhat different approach to export pricing and import pricing and, in which, unfortunately, in one sense, we got close to an impasse. But I do not think the Federal Power Commission feels that we dance when they call the tune. On the contrary, we worked out a sort of amicable approach from different vantage points.

Mr. Gilbert: Dr. Howland, I will make a thorough study, and next time I will be able to make a more penetrating...

Dr. Howland: We will be glad, Mr. Gilbert, to send you a history of this. It is very live with the Board.

Mr. Gilbert: Thank you, Mr. Chairman.

The Chairman: Mr. Roy?

Mr. Beaudoin: Mr. Chairman, I understood Dr. Howland to suggest that he had some explanatory remarks on these tables.

Dr. Howland: Mr. Chairman, these tables look more complicated than they are. They illustrate the type of people we have in the Energy Board. If you look at Table No. 1, "Petroleum Supply and Demand Balance", this is the way economists tend to put up a summary-analysis of a situation.

You will see, under "Demand", the consumption of motor gasoline; the middle distillates, which are heating oils; heavy fuels, which are for bunkers, and mostly for industrial use; and other products. That gives you the total net sales in Canada, which you can see, in 1960, were 798 thousand barrels a day and have now gone up to 1,262,000. Then you add a little bit of industrial consumption and you get the total demand in Canada. Under "demand" we have shown the export situation.

I am mentioning this because it gives a picture of the growth of our exports of crude and equivalent, and of our products; and this is an impressive record, going from some 113,000 barrels a day of crude and equivalent in 1960, to some 460,000 barrels a day estimated for 1968. The products go from 9.9 thousand barrels a day to 44.4. This, it seems to me, is worth looking at as a record of the growth of exports.

On the same table you can see what is happening to our imports. They, again, have grown considerably. If you take crude and equivalent in 1960, it is 343,000 barrels a day, and it has gone to 494,000; and products from 96.2 thousand barrels a day in 1960, to 210,000 barrels a day.

A great deal of this increase in the imports of products relates not to crude oil and gasoline but to heavy fuels which, typically, on the North American Continent are not what the refiners like to produce, being at the low end of the barrel. Ninety-four per cent of these imports are in the Quebec and Maritime areas, and this reflects the very vigorous growth which has taken place in those areas of Canada.

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The second piece of paper, or table, that I gave you shows the "Overland Exempt" exports. There is a slight difference between the total exports and the overland exempt ones. We send roughly 5,000 barrels of propane a day to Japan and we also send some products—not very much—from Eastern Canada where these products are refined from imported crude. They are minimal figures—a few thousand barrels a day.

The purpose of the second table on the overland is to give you a breakdown between the export areas. We talk about Districts I-IV first, which are roughly the areas east of the Rockies, and District V, which is west of the Rockies. That also gives you a fair indication of the detailed growth rates that have taken place.

The third table which I have before me is "Canadian Imports of Crude Oil and Products". This gives you some indication of the sources of our imports.

Mr. Mahoney: I do not believe we have that one.

Dr. Howland: If members have that table—I do not know whether we need to spend much time on it—it does indicate that Venezuela and The Netherlands Antilles are very important sources of our crude and products.

The fourth table is "Balance of Trade in Energy Commodities". From time to time some interest has been expressed on this matter in the House of Commons. These are our best approximations as of 1968 of where that balance is. It is true, as you will see here, that on petroleum there is roughly a \$100 million imbalance. It is quite interesting to note that the financial figures are quite different from the volume figures. There may be 200,000 barrels difference but the dollar value reflects a higher price for our exports than we pay for our imports.

If you balance off the export of natural gas in association with petroleum you will find that the balance, on the basis of oil and gas, is in favour of Canada. You have a balance on gas of \$122.4 million to set off against a loss of \$102.4 on oil, so that you get a net balance of \$20 million in favour of Canada.

Mr. Woolliams: May I ask a supplementary.

The Chairman: You can ask a question but we will not consider it a supplementary.

Mr. Woolliams: Well it fits right into what the witness is talking about. The anomaly, as I said, on the exports and imports of Canadian crude is the fact we import 200 million more than we export. Is there any other country that produces like we do and is only getting 40 per cent of her possible capacity and production? Is there any other country in that bad a shape?

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Dr. Howland: I really do not know. I am not sure that the yard stick is applicable or meaningful to Canada.

Mr. Hymmen: Mr. Chairman, for the record, I think Mr. Woolliams said \$200 million. It is \$100 million, is it not?

Dr. Howland: I think Mr. Woolliams was dealing with volume as against dollars.

The Chairman: Mr. Roy.

Mr. Roy (Timmins): Dr. Howland, you say that the new pipe line is now completed. At the time

that the company was applying for its permit to build this pipe line I think mention was made that part of the terms of the agreement was that the northern pipe line at some time would be twinned. Do you have any idea of any new developments in this area, or any contemplated date for this twinning?

Dr. Howland: Mr. Fraser tells me that they have undertaken to proceed by 1970.

Mr. Roy (Timmins): Before 1970.

Dr. Howland: Yes, but we have no knowledge at the present time of any immediate plans to do so.

Mr. Roy (Timmins): No new developments in that area. Thank you.

The Chairman: Mr. Deakon.

Mr. Deakon: Mr. Chairman, my question is on the long-range forecast by the Board.

As I recall it, Dr. Howland did not give an explanation of these forecasts. If I may refer to an IPAC newsletter of June 1968, it refers to a meeting held by this Association with the National Energy Board Task Force. This newsletter indicates that the purpose of the meeting was to discuss a comprehensive series of long-range forecasts which had been prepared by the Board. These forecasts covered the period up to 1985. Is there any possibility of you advising us what these forecasts are?

Dr. Howland: At the moment I would have to say that we are like an auditor at the final stage of putting together figures to see what they add up to. This meeting with the Independent group in Calgary was very valuable to the Board. It sent a group of five economists and engineers to discuss with them, among others, the projections which we were making—the assumptions which we were making. These are the important things. They made a great contribution to our discussions. But we are just at the stage now of pulling this together with a view to placing it at the disposal of members and, we hope, of industry too.

Mr. Deakon: Mr. Chairman, I guess this is wrong then. It says:

The Board are in the process of explaining the basis used in preparing these forecasts...

So you must have prepared the forecast for discussion with interested people.

Dr. Howland: Oh, I am sorry I did not respond to that. The situation is that before this task force went out to meet provincial authorities and industry we, the staff, did in fact make assumptions, stated

them, and did a great deal of work. This was a testing. We are modifying some of the assumptions which the staff had previously been prepared to make by reason of these discussions. The real value of the discussions was to have people comment on them, particularly on the regional basis.

Let us be quite clear. What I am saying is that we, the staff, did prepare a draft of its forecast. It has proceeded to test the assumptions which went into this forecast and is now modifying these and getting the final study into a state in which it can be published. Is that clear to you, sir?

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Mr. Deakon: Well, I would like to know what the forecast consisted of. This is what I am after.

Dr. Howland: I think the Board would too. That is why we are working on it.

Mr. Deakon: Another question, Dr. Howland. On page 4 of your Annual Report you state that:

The discovery of thick Devonian reefs in the Rainbow-Zama area of northwest Alberta in early 1965, coupled with the ability of advanced seismic techniques to locate these reefs, has prompted a surge of exploration...

Could you tell us, please, what proportion of these explorations are being carried on by foreign interests—that is, non-Canadian companies?

Dr. Howland: I am afraid I could not. I would have to know all the individual companies operating there and then ascertain by whom they are owned.

Mr. Deakon: Could you please tell the Committee what percentage of our crude oil is refined in Canada?

Dr. Howland: If you take the refineries total demand in Canada, I would hazard a guess—I will be glad to get the correct figure—that it would be about 60 per cent.

Mr. Deakon: Thank you, Dr. Howland.

The Chairman: Mr. Sulatycky, you are next on my list.

Mr. Sulatycky: Dr. Howland, on the first page of your Annual Report you indicate that you have regulatory functions, including authorizations for the export and import of gas. Can you tell us whether you have denied export permits?

Dr. Howland: Ever?

Mr. Sulatycky: Yes.

Dr. Howland: Yes.

Mr. Sulatycky: How many?

Dr. Howland: I can think of two immediately, but subsequently there were modifications and re-applications which were approved. I am going back in my mind to 1959 and early 1960, to the Niagara Gas Transmission Company and the more recent Westcoast application. I can search and get you a full reply, if you have a purpose, but my recollection is two denials.

Mr. Sulatycky: Just as a matter of interest, have you denied any import permits?

Dr. Howland: I do not recollect that we have.

Mr. Sulatycky: If it were not for the existence of this Board or for the existence of a particular policy, would the exportation of Canadian crude petroleum and/or natural gas increase?

Dr. Howland: If it were not for the Board?

Mr. Sulatycky: Yes.

Dr. Howland: I do not know whether you could say this. It is really a hypothetical question. But certainly Canada set up Energy Board and one of the reasons for setting it up was in fact to control the export of natural gas. You will see in Section VI of the Act specifically that we are requested to control the exports.

Mr. Sulatycky: Is my information correct when I say that the known reserves of both gas and oil in Canada are increasing at a greater rate than the increase in sales, whether domestic or foreign?

Dr. Howland: I think that is a true statement.

Mr. Sulatycky: Is it correct to say that the increase in reserves does not take into account the tremendous reserves in the Athabasca tar sands?

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Dr. Howland: Well, we do not control, in the same way as we do natural gas, the export of oil. If you are talking about natural gas, the Board has been concerned about the rate of discovery of natural gas, not from the point of view of supply in Canada but from the point of view of the ratio of exports to our domestic use, and we have so expressed ourselves. This is partly a function of the export demand. The industry obviously is not going to go ahead and spend a lot of money exploring for natural gas unless it has a reasonable anticipation of sales, but there can be, and has been, some time lag which has been of some

concern to the Board because we are charged with the responsibility of ensuring that Canadian foreseeable requirements are met before allowing an export.

Mr. Sulatycky: Now, Mr. Woolliams asked if there is any other country to your knowledge which is in a similar situation to Canada in relation to the imports and exports, and I would like to ask if you know of any other country where the known reserves are increasing faster than the sale of oil and gas is increasing? It is certainly not so in the United States.

Dr. Howland: Oh, I think the answer has to be yes. The rate of discovery in some of the North African countries is tremendous. A few years ago Algeria had very little reserves, now they are producing a million barrels a day. One would have to say that in such areas the rate of discovery has been tremendously greater in relation to use in their countries. If that is the question, then I do know of countries.

Mr. Sulatycky: Yes. Their sales, either domestic or foreign, are not increasing as fast as their new-found reserves. Is this correct?

Dr. Howland: No. I think you then get into the hazard of saying, "Do I know of any country where there is this relationship between international pricing and the price of domestic crude?" This is your key question then: do I know of any country that has as good a level of production where the competitive situation is such as it is in western Canada? What we are discussing now is quite a different thing: we are in a situation where we are exporting to a special market—the United States.

Mr. Sulatycky: I will change to another line of questioning here. Does the Board keep track of all the new developments in the oil and gas industry? Are you completely up to date on the new developments? Do you think the new developments will be a consideration when you plan your oil policies or gas policies?

Dr. Howland: One would have to say, sir, in the light of today's activity of the industry, no board could do this; but I can assure you that we have extraordinarily good relationships with industry. We receive a great deal of confidential information from companies so that we are, within reason, abreast of what is taking place. To say that any board could keep pace with exploration and development today would be, I think misleading.

Mr. Sulatycky: Within the last few days there was an announcement from the United States that one of their research facilities—I believe it was one of the government research facilities—had devised a method by which they

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could produce gasoline from coal at a cost of 12 cents a gallon. Do you think this is something that is going to become functional and feasible within the next decade?

Dr. Howland: Possibly the best reply to that is that certainly some of the oil companies in the United States felt that that was so. They, therefore, have got into the coal business based on this type of anticipation. The latest feeling we have been given on this matter is that it is possible that the discovery of the large resources of oil to the north may have set back the program in respect of the production of gasoline from coal for possibly a decade. These are the kind of judgments which will come from individual companies who must decide at some stage whether in this research—and it is very real research motivated by sound economics—they will pursue one route or the other which will be a matter of individual company choice, I think.

Mr. Sulatycky: Which of the coal deposits in Canada are suitable for the production of gasoline?

Dr. Howland: I do not know that I, technically, could answer that. I was in Nova Scotia some years ago. I was also Secretary of the Royal Commission on Coal in 1946 which was responsible for the Carroll report. I have had some interest in coal for 20 years. We sent down from Nova Scotia, years ago, some 40 tons of coal to test it in American facilities. I do not think there is a problem of the quality of the coal; it is more to do with the price. If one has coal at \$2 or \$3 a ton at the pit, then you can begin to look at things you cannot look at at \$8. Secondly, the location of the coal field becomes quite important. If the coal fields near Calgary were located near Toronto there would be no problem of getting production.

Mr. Sulatycky: Let us move Toronto to Calgary.

Dr. Howland: That is right—move Toronto.

Mr. Sulatycky: That is all the questions I have, Mr. Chairman.

The Chairman: Mr. Mahoney?

Mr. Mahoney: Through the Chair, Dr. Howland, I would like to ask a few specific questions regarding administration of the national oil policy. I should preface this by stating that I am sure everyone here is well aware that this is a voluntary policy and that its enforcement is procured by persuasion on the part of your body and not through any

legal sanction. However, it would seem to me that one of the bodies who would not be too difficult to persuade in the circumstances would be the Government of Canada itself.

In late May or early June of this year, there was an announcement made of the purchase, for the Department of National Defence, of aviation turbine fuel for the Trenton Air Force Base from Montreal refineries, coincidental with which The British America Oil Company Limited announced a cut-back in its Clarkson refinery output in Ontario of, I believe, some 10,000 barrels per day. Have you any comments to make on that situation? Do you know whether or not the cut-back in production at Clarkson was related to the loss of this contract or to the granting of a new contract to BP Refinery Canada Limited in Montreal?

Dr. Howland: It was not my impression that that was so, Mr. Mahoney. My good friend Carl Nickle pointed out last June that due to the retirement of Mr. McKinnon and lie back of a Board chairman, imports into Ontario appeared to be increasing. This launched into the public domain the suggestion that there had been a change in the situation. What had happened in the preceding few months was that we had a number of matters affecting the imports and transfers into Ontario.

First we had three refiners having difficulties operating—technical problems occurred one after the other—so that they became short of supply. Secondly, Interprovincial Pipe Line Company was running short of capacity because of the lack of pipeline capacity in the United States. The companies in Canada pro-rated right through the Prairies and into Ontario in order to co-operate with the United States in that situation. When the spring came the industry, even Ontario refiners, had been short of supply; they had looked after everybody, but their inventories were down. There was only one way to remedy this, and that was to bring in some product. This tended to loosen the appearance of things, and we had to tighten up on everybody, which we did, and ask people to respect the wishes of Parliament on this program. They have, in very large part, complied. It was at this stage that B-A did, in fact, cut-back.

There were one or two people we discussed matters with and it was probably a month later that British American re-nominated for that volume which they had curtailed. There was not a public announcement of this, I think, because my Minister was away or sick, but this was, in fact, the event; that B-A did reinstate its nomination.

Mr. Mahoney: What is the criterion that the Board would apply to a suggestion by a government department that it deviate from the national oil policy in its case?

Dr. Howland: I think the Board's attitude is quite clear, that we would draw to the attention of government, for policy decision, what the facts of situation are. There have been decisions made on this; there is a preferential position given to the use of Canadian producers' products—a greater preference, considerable preference, for products coming from refineries using Canadian crude. There is a second preference, considerably less but still there, regarding products manufactured in Canada as against imports. This is a government policy and has been stated. It is not Board policy, but we certainly analysed the situation in a number of places and sought and received government policy which is not administered by this Board. The Department of Defence Production does the purchasing.

Mr. Mahoney: This may fall within the purview of the general answer you have given: in the period from September, 1966, through to August of next year, the Department of Public Works purchased something over 17 million gallons of diesel fuel oil for use at Churchill, Manitoba. In this case, this is produced direct from Aruba with no bids being received from Canadian refiners any place. Do you have any comments on that particular thing? Would you, for example, in this instance examine the tender documents that the Department of Public Works—or the Department of Defence Production, on its behalf—issues to see whether or not those preclude Canadian refiners or Canadian producers from competing in that particular market?

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Dr. Howland: The Board has studied this for the government and, associated with that analysis, there has been an increased use of propane in that area. The differential on the Canadian source of some of this diesel fuel is a very great one and it was the considered judgment of the government that the differential was such that it could not justify that expenditure.

Mr. Mahoney: Thank you.

The Chairman: Mr. Beaudoin?

Interpretation

Mr. Beaudoin: A moment ago, Mr. Howland told us that if the United States wanted to set up a pipeline to send oil, they would have to do it pretty soon. Why is that?

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[English]

Dr. Howland: I am sorry, sir, I do not think I made myself clear on this. I am saying that the United States companies who have made these discoveries in the north are very active in their studies as to alternative movement arrangements and that they will have to make decisions pretty fast. If there are to be pipe line developments in Canada associated with the north in the immediate situation, this will depend in part on the discoveries of oil in Canada in that area.

[Interpretation]

Mr. Beaudoin: Could this perhaps change your estimates for the cost price?

[English]

Dr. Howland: You are right, sir. Nobody really knows too much about these resources. It must be apparent that those companies concerned with the discovery must believe that they have substantial resources in order to get their unit cost down in such a manner as to be able to move it from such outlying positions. The impact of that on the Canadian situation is one thing that the Board is most anxious to study.

Mr. Beaudoin: Thank you.

The Chairman: Mr. Harding?

Mr. Harding: Mr. Chairman, I am sorry I missed the earlier part. I would not like to cover any questions that have already been gone over, but I have one or two questions I would like to ask in connection with natural gas sales to the United States.

Who negotiates the contracts and the price for the natural gas sales to the United States? Is it the companies involved?

Dr. Howland: That is correct.

Mr. Harding: Where do you come into the picture?

Dr. Howland: We come into the picture, sir, when they make an application to the Board for a licence to export, at which time they have to establish to the Board two matters essentially of the Act. One is that the gas which is proposed to be exported is surplus to Canadian requirements. The second is that the price is just and reasonable.

Mr. Harding: I just missed the last point.

Dr. Howland: The price has to be established to the satisfaction of the Board as being a just and reasonable price.

Mr. Harding: May I speak of British Columbia for a few minutes. Do you have handy the prices which are paid by the American consumers for natural gas and the prices which are paid by the Canadian consumers on the same lines? Do you have that information with you?

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Dr. Howland: I do not have it with me here today, sir. What we deal with really is the wholesale price.

Mr. Harding: I understand that.

Dr. Howland: We would probably have here the prices which were applied for by the Board, at least before the Board, and the judgment we formed on those prices. But I could not tell you today what the wholesale price is in particular markets. We certainly could find it for you.

Mr. Harding: I think last year perhaps a new contract was negotiated, but prior to that there was a fantastic difference in the amount of the price paid by an American industry just south of the B.C. border, and Canadian industry in Canada. The Canadian industrial users were paying 40 or 50 per cent higher. This seems to me to be completely out of line, and I was just wondering who is looking after the interests of those Canadian users in this regard?

Dr. Howland: Do you have in mind the 1954 initial contract between Westcoast?

Mr. Harding: Yes, which I think was revised last year or the year before.

Dr. Howland: There has been a number of revisions, but not of the original contract. That is still there.

Mr. Harding: The same price exists?

Dr. Howland: No, there have been several other contracts which have substantially higher pricing, but this contract was in existence before the Energy Board was appointed.

Mr. Harding: I see. What lever do you use to protect Canadian interests in this regard?

Dr. Howland: I think the point of view of the Board has been quite clearly set out in its decisions regarding its findings on prices. If the Board does not think that the price is a reasonable just price, then the Board denies the application, as we did on the Westcoast recent application. They then amended it and came back with a higher price. I think the net gain to Canada of that decision of the

Board was \$29 million, if my memory is correct. But this is the authority which the Parliament of Canada gave this Board and its responsibility, which is to deny applications where we are not satisfied that the price is just and reasonable.

Mr. Harding: Just what practice do you use in setting a price as between, we will say, export sales and those on the domestic market?

Dr. Howland: We have three of them here. Mr. Fraser is just referring it to me. It was outlined in this decision on the Westcoast. It reads:

... the Board has applied to the proposed export price its three normal tests.

(1) Does it recover its appropriate share of the costs incurred by the Canadian transmission company?

(2) Is it not less than the price to Canadian customers of the transmission company in the general area of the proposed export, after allowance for variations in the terms of delivery?

(3) Does it result in prices in the United States market area close to the least cost alternative for energy from indigenous sources?

Those are the three yardsticks that we have tended to apply in measuring the justification of the proposed price of an export.

Mr. Harding: Is it fact that the export prices are generally lower than the prices charged on the domestic market?

Dr. Howland: No, on the contrary. It is usually the opposite way.

Mr. Harding: Usually.

Dr. Howland: Yes, the one problem we have had, as you know, is the very low price of that original contract between Westcoast.

Mr. Harding: The Westcoast is the exception to this rule.

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Dr. Howland: It is the exception.

Mr. Harding: One more question. It is in connection with oil. What are the Canadian reserves in terms of a year's supply, currently?

Dr. Howland: Assuming the present levels of production, how many years could we produce gas?

Mr. Harding: Yes.

Dr. Howland: The last figure I recall, and it may be wild, but I think Alberta was something like 24 years. This is the key province. The big resources so far are there, and as Mr. Woolliams was saying, they have a lot of shut-in capacity and, secondly, they have proved-up resources which are very substantial in relationship to their present production.

The Chairman: Mr. Moores.

Mr. Moores (Bonavista-Trinity-Conception): I just have one very brief question, Mr. Chairman. With the recent mention of the continental shelf and its potential, particularly as it applies to oil and natural gas, et cetera, can the Board tell us if they know if any substantial degree of exploration will take place in the immediate future. We have heard about the Arctic. I am thinking particularly of the East and West coast shelves.

Dr. Howland: I think, sir, this is more a question to go to Energy, Mines and Resources who are concerned with offshore matters, but the reading that we have, as we are very close to industry and Energy, Mines and Resources on these matters, is that there is very great activity going on in the East and the West.

If I could volunteer this, a few years ago I was in the Maritimes, and on the Borden Commission. I had a little regional implication possibly there, and I asked polite questions about the outlook of the industry in the Maritime area. The general reading then was that it was likely oil-bearing country, but that the resources were not likely to be very large. I think if you ask the industry today or some of those very active in that area, I think the opposite would be true, which is that the indications are that the structures are very large and very interesting from an economic point of view. The only question is are they oil-bearing.

Mr. Moores (Bonavista-Trinity-Conception): Last week on a point of order it was mentioned that we get the information that is going to be tabled at these meetings by the witnesses as quickly as possible. This Annual Report, I am sure, was a help to a great many members today in getting it early. If in future we could ask the witnesses coming to make the information available to us as early as possible, I am sure it would be most appreciated, certainly by myself.

The Chairman: Thank you for bringing that point up, Mr. Moores, and for your comments. We have the documents here from the National Research Council which will be passed out before the end of this meeting, and the others will receive them by tomorrow I presume at the latest. We will send them out today.

Mr. Gilbert: Mr. Chairman, I would like to ask some questions in regard to electrical power. Possibly, Mr. Briggs could answer. I notice in your report on page 24 you say that there is going to be a change in the proportions of electrical power and energy. You point out that we get our electrical power from 82.3 per cent water power, 15 to 20 per cent coal and natural gas, and .06 in nuclear power. I am just wondering what changes you anticipate in those proportions, more especially with regard to nuclear power.

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Mr. H. L. Briggs (Member, National Energy Board): Mr. Chairman, and gentlemen, those proportions are bound to change. They will change largely in accordance with economic circumstances. In Central Canada the hydraulic resources have to a great extent been developed. This is not entirely true, but it is largely true. The hydraulic resources that remain are more costly than those that have already been developed, and they are more remote from the big electric power units. This means that other sources are being swung in particularly in Ontario and in Western Canada. Did you wish me to speak briefly relative to nuclear and conventional thermal?

Mr. Gilbert: Yes, that is right.

Mr. Briggs: To a considerable extent the choice between nuclear sources and conventional thermal sources is an economic one. But, before it becomes an economic one, we have to look at this question of the size of the electric units that are economic. When we look into the position on nuclear power we find that very large size units are required before the economics makes these nuclear units attractive. The place of the break is different for different occasions, but a number of engineers believe that we have to get perhaps well above 300,000 kilowatt machines, perhaps up to 500,000 kilowatt machines, in nuclear generators before they become really economic. So our first hazard is that we must have electrical loads that are growing sufficiently rapidly to justify very large machines. If that situation does exist then we are in the position of being able to make a choice between nuclear power and power from coal or oil.

The situation in Ontario is, of course, that Ontario has very little indigenous coal reserves. It has some, but no great quantities, and on that account the prospects of developing additional nuclear power sources do look attractive. A similar situation will probably follow along in certain of the other provinces as the years go on.

Mr. Gilbert: Mr. Chairman, to Mr. Briggs again: it follows the second point on page 25 where you say you made an economic feasibility study in regard to a national electric power network, that the study is being made and the report sent to the ministerial committee. Is it possible for the members of the Committee to get a copy of this report?

Mr. Briggs: My understanding is that these reports are to be issued very soon to members of the House.

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Mr. Gilbert: I see. The final question, Mr. Briggs, is with regard to the study and the analysis of the Northeast power failure of 1965. Was that when we put New York into an involuntary blackout? What was the cause?

Dr. Howland: That is a leading question.

Mr. Briggs: What was your question, Mr. Gilbert?

Mr. Gilbert: What was the cause of putting New York into this involuntary blackout? Were we responsible? Was Ontario responsible for this power failure in New York?

Mr. Briggs: It is a matter of history that the simple initiating cause occurred in Ontario but the reason for the blackout stemmed from a whole multitude of circumstances, unfortunate if you like: the pyramid, the shutdown of both transmission lines and power stations which all accumulated to produce this total shutdown.

Mr. Gilbert: It sounds like a typical answer that a minister would give in the House, and I say that rather warmly and not disparagingly.

Dr. Howland: I am sure that Mr. Gilbert knows that the work which Mr. Briggs headed up with the Board on this blackout which was an analysis in depth on its causes and the discussions we had with the provincial authorities based on that report was a very valuable contribution. I am sure Mr. Gilbert knows that.

Mr. Woolliams: I would like to deal with two further points which I touched on but it is so big a subject that I do not think we have time this morning. I want to get your attitude on one. In view of the large, now found proven reserves in the Northern Arctic, Alaska and elsewhere in the North, does your Board now favour, and would you be prepared to recommend, a continental oil policy under which *pro rata*, right across, as the pipelines came down through Alberta, they each would bet a share of the possible market both in Canada and the United States.

Dr. Howland: The first approach of the Board, Mr. Woolliams, is to try to get at the facts of the matter. This is highly important and the Board...

Mr. Woolliams: Have you made a study of this...

Dr. Howland: No. The Board is very actively engaged in this. We have received some confidential reports already which have not been available to those who have been yet speaking about policy. The first thing we want to do, and we are very very much impressed with the necessity, Mr. Woolliams, is a very careful appraisal of what the potential is for Canada. We think that the potential of this could be very considerably in favour of Canada or it could be on the opposite side of things and we are most anxious and intend to work very closely with all the initiative of our Canadian industry to assess this matter very thoroughly so that the Government and Parliament may in fact lay down the policy which should be followed here. We are very impressed also, at the moment, with the lack of information. We do not know whether, in fact, a proposed line would be profitable to anyone.

Mr. Woolliams: Well, Doctor, should we set up now, because at least I take this from your answer, that there is assessment being made along these lines.

Dr. Howland: Yes.

Mr. Woolliams: It is a big study, it is a very important study because there is concern and fear in the industry and, whatever the colour of the report is, I am sure the grain growers would be pretty upset if we were bringing in \$200 million worth of grain more than we were exporting. The answer is, would it not be a good time—let us get on top of this thing while there is time—to set up a very careful study or a commission just on this matter to review all the economics, to review the potential, the reserves, the supply and the markets and then come up with an answer on this very quickly before we lose our crude petroleum market altogether.

• 1250

Dr. Howland: Mr. Woolliams, this is exactly what the Board is doing.

Mr. Woolliams: How many on your staff have you got on that study, sir?

Dr. Howland: Not as many as I am asking for?

Mr. Woolliams: How many would you like to have? I think it is our function to find out how we can assist a man of your calibre.

Dr. Howland: Well, sir, it will be a shock to the Treasury Board. We are very much geared to this. . .

Mr. Woolliams: Is this not important to the country, the economics of the country? I do not know the exact ratio, but I read recently that a dollar used to purchase crude petroleum may be worth \$3, if you were using Canadian petroleum instead of the importation. Therefore, it is so important with our balance of trade and our relationship economically with the United States, is this not a place where money should be spent and is this not a priority that we should be setting up now to make certain that our industry is protected in the future?

Dr. Howland: Mr. Woolliams, I could not agree with you more.

Mr. Woolliams: Thank you very much. Now I am going to go into another line of questioning. I am coming back to the eastern Canadian market because, with the greatest respect to you, sir, I was not quite satisfied with your answer.

Dr. Howland: I am never satisfied with my own, Mr. Woolliams.

Mr. Woolliams: But fellows like Mr. Charles Lee, past president of the Independent Petroleum Association of Canada and others feel for a matter of economics that it is possible today for a Montreal pipeline or a pipeline of a similar nature to be able to take crude petroleum from Alberta to the eastern market and effectively compete with the imports that are now coming into Canada? Can you conscientiously say from the study that is being made by your Board that they cannot compete?

Dr. Howland: I can say this, sir, that when you mentioned my friend, Mr. Charles Lee, who is a man for whom I have the highest regard, he and his colleagues have done a very useful job for Canada in their pressure to open up new markets. Our comments to them on some of their studies have indicated to them where they perhaps should do a bit more research, and I refer specifically to the assumptions which they made in their cost studies regarding tanker rates. This is a key consideration. In the present circumstances, the indication the Board has is that the price differential, if anything will go the other way because of the technological development of tankers. We have discussed with Mr. Lee, specifically, and some of his colleagues, the assumptions they have made in their cost studies.

Mr. Woolliams: What about technological development of pipelines today with new materials? Is it not pretty well even?

Dr. Howland: I do not think so, sir. We on this Board are fairly familiar with the techniques of pipelines. We get tariffs and reports and are constantly in touch with the pipelining industry in their applications for certificates to the Board. So we do feel that we are very closely associated with the developing technology and the resulting economics in the pipeline structures. We also have been carefully watching the developments on the tankers, and our staff share this view, that the tanker situation as assessed by those who believe that western Canadian crude can be laid down in Montreal competitively with imported oil have made some rather difficult assumptions regarding the tanker rates.

Mr. Woolliams: There is one last thought. It really arose out of what Mr. Mahoney asked you which I think is very important. When the national oil policy was put together, they sort of had a border between the eastern Canadian market, the western market and the market in the United States, in Toledo, Detroit, Chicago, or the western part of the United States. Are the refineries now in eastern Canada refining imported crude and dumping the finished product, as it were, in that area which was really the reserve of the western Canadian market and the western United States market?

Dr. Howland: Did I hear you correctly? Ontario refineries using imported crude?

Mr. Woolliams: Well, Montreal and Ontario.

Dr. Howland: Let us clarify—

Mr. Woolliams: That is the point I think Mr. Mahoney was making. Has the Board taken any firm steps in this regard?

Dr. Howland: Let us clarify this. The answer to the first point, "Is any crude oil being imported into Ontario?", is no, except for about 1,500 barrels a day.

Mr. Woolliams: What about the finished product?

Dr. Howland: This is of Boscan crude. Let me, if I may, finish. There is a little asphalt crude that comes in. Apart from that there is no crude oil brought into Ontario. What was the other question?

Mr. Woolliams: What about the finished product? What they do, they bring the crude into Montreal, refine it and the finished product can be put there. . .

Dr. Howland: On that matter, we are dealing now with west of the Ottawa valley. A voluntary program has achieved a situation where 96 per cent of the gasoline used in Ontario is manufactured from western Canadian crude. It is a 96 per cent perfect program on gasoline.

The middle distillates situation is not quite as good, but this is a more difficult one to handle because they are competing with western Canadian gas and the situation here is a very complex one. If you lowered the price of western Canadian crude to meet western Canadian gas, among other things, I do not think there would be a uniform vote of confidence in the oil policy in western Canada. So we do not have quite as much perfection on middle distillates but it has gone down substantially since the oil policy was introduced.

On the heavy bunkers, which is an industrial fuel, the oil policy has never restricted this movement. This is typical of the North American refining situation where in the United States, as in Canada, the tendency of the refiners, in order to keep the prices down, has been to maximize their gasoline production with the result that your lower ends are just not available in sufficient quantities. So both Canada and the United States have tended to follow this policy of importing substantial volumes of bunker "C" rather than manufacture them. This has resulted in lower pricing of gasoline and middle distillates than would otherwise have been the case.

The Chairman: Gentlemen, it is now one o'clock. Mr. Chappell and Mr. Lind have some questions.

Is there a willingness on the part of the Committee to sit a few extra minutes if we can finish Item No. 85 now?

If there is not a willingness maybe we should carry it over. Is there willingness to accept this? The reason I say this is that we have a double meeting lined up for Tuesday morning from 9.30 to 11 and from 11 to 1. The National Research Council will be with us at 9.30 a.m. Possibly the Committee would like to extend into that second meeting the same morning with NRC. I would like the Committee's views this morning on whether or not you would care to sit from 9.30 to 1 and have a recess for possibly 10 minutes at approximately 11 o'clock.

Later on the same day we have a third meeting, at which time we could have the International Joint Commission before us. I might say here in view of what Mr. Moores (Bonavista-Trinity-Conception) has brought up that apparently the International Joint commission has no annual report. This is something the Committee might possibly

want to discuss with them in view of the fact that they will be appearing before this Committee from here on.

• 1300

Mr. Gilbert: Mr. Chairman, maybe they could send along a copy of the opening statement so that we could study that.

The Chairman: We will bring this to their attention, Mr. Gilbert. Mr. Chappell?

Mr. Chappell: Mr. Chairman, I have another meeting I must attend at 1 o'clock. If I could be excused I would like to leave now if it will not upset your quorum.

The Chairman: We still will have a quorum. Do you wish to forego your questions, Mr. Chappell?

Mr. Chappell: I have no choice.

The Chairman: Before Mr. Chappell leaves I would like to ask the Committee's permission to report to the House the items already approved or approved up to the end of this meeting in our second report. Is this agreed?

Some hon. Members: Agreed.

Mr. Chappell: May I ask, on a point of order, Mr. Chairman, if there are some who have not asked questions on the first round, should they not come before members who are on the second round, even though the members on the second round may have put their hands up earlier? If not it would seem that you have to put your hand up to get on the first round, even though at that time you have not firmly decided you wish to ask questions.

The Chairman: On this point, Mr. Chappell, possibly I should always mention when we are starting the second round, but I feel that if members have questions to ask they should automatically come on the first round, because members who are participating on the first round and wish to ask questions on the second round should have the right to follow in their proper order as indicated by their willingness to ask questions. Otherwise we are going to get into arrangements in the middle of the meeting. I take it you are foregoing your questioning at this time?

Mr. Chappell: Yes.

The Chairman: Mr. Lind, you are next.

Mr. Lind: I have two brief questions to ask through you, Mr. Chairman, to Mr. Fraser. Is

Interprovincial Pipe Line Company going to twin their line through southern Ontario this year?

Mr. Fraser: Mr. Chairman, we have an application before us now from Interprovincial Pipe Line Company for certain facilities in western Canada which will result, if the application is approved, in the completion of the third line of pipe from western Canada to the United States border. But the only new facilities in Ontario this year are some seven miles, I think it is, of loop near Sarnia plus increases in pumping capacity at two stations, if I recall correctly. Therefore, Mr. Lind, there is very little construction in Ontario proposed by the company this year.

Mr. Lind: They leased quite a bit of land last year, or took leasing rights on quite a bit of land last year. It was my understanding they were going ahead to twin a lot of this during 1969. I take it then that Interprovincial Pipe Line Company is giving up this twinning idea for 1969?

Mr. Fraser: As we presently understand it, yes.

Mr. Lind: Thank you very much.

The Chairman: Shall item 85 carry?

Item 85 agreed to.

The Chairman: As previously agreed we are now arranging meetings as soon as possible with the National Research Council. This will be of course Tuesday morning at 9.30 and you will receive due notice. This will be a continuous meeting from 9.30 to 1 o'clock with a break at 11 a.m. We will be meeting a third time on Tuesday and that will complete our discussions with the Crown corporations.

After Tuesday's meetings I would also like to get agreement to pass items 1 and 5 so that we can return all the estimates back to the House by Tuesday night.

• 1305

At this time I would like to thank Dr. Howland and his colleagues for being with us today, and we will be looking forward to having them back in the new year. Thank you very much, gentlemen.

APPENDIX C
CANADIAN IMPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS
US/D

	1960		1961		1962		1963		1964		1965		1966 ^(a)		1967 ^(a)		1968 ^(a)	
	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%
CANADA																		
Total Imports																		
Crude.....	348.1	100.0	365.1	100.0	368.5	100.0	404.8	100.0	392.3	100.0	395.0	100.0	434.4	100.0	447.0	100.0	494.6	100.0
Products.....	96.2	100.0	80.7	100.0	83.0	100.0	92.7	100.0	111.9	100.0	162.5	100.0	163.8	100.0	187.0	100.0	210.8	100.0
Total.....	439.3	100.0	445.8	100.0	451.5	100.0	497.5	100.0	504.2	100.0	557.5	100.0	598.2	100.0	634.0	100.0	705.4	100.0
Venezuela and Netherlands Antilles																		
Crude.....	198.9	58.0	223.4	61.2	233.4	63.3	246.9	61.0	279.5	71.2	243.8	64.7	216.6	49.9	285.0	68.8	338.3	68.4
Products.....	56.0	58.2	51.1	63.3	54.5	65.7	62.5	67.4	71.4	63.8	115.5	71.8	116.5	71.1	129.3	69.1	146.7	69.6
Total.....	254.9	58.0	274.5	61.6	287.9	68.0	309.3	62.2	350.9	69.6	359.3	64.5	333.1	55.7	414.3	65.4	465.0	68.8
Middle East																		
Crude.....	136.0	39.6	131.4	36.0	122.6	33.3	147.9	36.5	98.8	25.2	136.6	34.6	164.1	37.8	111.6	25.0	134.0	27.1
Products.....	0.4	0.4	0.4	0.5	—	—	—	—	—	0.2	0.1	1.6	1.1	—	—	—	—	—
Total.....	136.4	31.1	131.8	29.6	122.6	27.1	147.9	29.7	98.8	19.7	136.8	24.5	165.7	27.7	111.6	17.6	134.0	19.0
Other Countries																		
Crude.....	88.2	2.4	10.3	2.8	12.5	3.4	10.1	2.5	14.0	3.6	14.6	3.7	53.7	12.3	50.4	11.2	22.3	4.5
Products.....	39.8	41.4	29.2	36.2	28.5	34.3	30.2	32.6	40.5	36.2	46.8	28.8	45.7	27.8	57.7	36.9	64.1	39.4
Total.....	48.0	10.9	39.5	8.8	41.0	9.1	40.3	8.1	54.5	10.7	61.4	11.0	99.4	16.6	100.1	17.0	86.4	12.2
EASTERN CANADA																		
Quebec and Atlantic Provinces																		
Crude.....	333.2	97.1	357.4	97.9	366.8	99.5	402.6	99.5	391.0	99.7	393.2	99.5	432.9	99.7	445.8	99.7	493.1	99.7
Products.....	62.1	64.6	56.0	69.4	58.1	70.0	67.1	72.4	81.5	72.8	89.7	55.2	123.7	75.5	144.7	77.4	171.6	81.4
Total.....	395.3	98.0	413.4	92.7	424.9	94.1	469.9	94.5	472.5	93.7	482.9	86.6	556.6	93.0	590.5	93.1	664.7	94.2

^(a) Preliminary
^(e) Estimated.

November 15, 1968

“OVERLAND EXEMPT” EXPORTS OF CRUDE OIL AND EQUIVALENT AND REFINED PRODUCTS¹
TO THE UNITED STATES—1960-1968

Unit: Thousands of Barrels per day

	1960	1961	1962	1963	1964	1965	1966	1967	1968 ^(e)
DISTRICTS I-IV									
Crude and equivalent.....	63.3	93.3	110.2	122.3	136.7	153.1	185.8	228.1	298.0
Butanes and other feedstock.....	0.5	0.9	2.3	2.7	6.1	7.4	8.8	7.6	8.0
Total Feedstock.....	63.8	94.2	112.5	125.0	142.8	160.5	194.6	235.7	306.0
Finished products.....	2.5	4.1	4.0	3.1	4.2	7.5	10.3	11.9	13.5
Total Feedstock and Finished Products.....	66.3	98.3	116.5	128.1	147.0	168.0	204.9	247.6	319.5
DISTRICT V									
Crude and equivalent.....	49.5	91.0	125.9	125.9	141.2	142.6	161.8	185.2	160.0
Butanes and other feedstock.....	0.5	0.9	1.3	2.4	5.2	6.2	8.3	8.9	9.0
Total Feedstock.....	50.0	91.9	127.2	128.3	146.4	148.8	170.1	194.1	169.0
Finished products.....	0.5	0.4	1.2	1.1	1.6	2.4	2.8	3.5	6.5
Total Feedstock and Finished Products.....	50.5	92.3	128.4	129.4	148.0	151.2	172.9	197.6	175.5
TOTAL U.S.A.									
Crude and equivalent.....	112.8	184.3	236.1	248.2	277.9	295.7	347.6	413.3	458.0
Butanes and other feedstock.....	1.0	1.8	3.6	5.1	11.3	13.6	17.1	16.5	17.0
Total Feedstock.....	113.8	186.1	239.7	253.3	289.2	309.3	364.7	429.8	475.0
Finished products.....	3.0	4.5	5.2	4.2	5.8	9.9	13.1	15.4	20.0
Total Feedstock and Finished Products.....	116.8	190.6	244.9	257.5	295.0	319.2	377.8	445.2	495.0

(e) estimated

¹ Covers products refined in Canada from indigenous crude oil and exported to the U.S. by pipe line and road or rail, excluding heavy fuel oils and petro-chemical feedstocks.

Source: Trade of Canada.

National Energy Board
National Oil Policy Unit
December 3, 1968

PETROLEUM SUPPLY AND DEMAND BALANCE, CANADA 1960-1968

(Thousands of barrels per day)

	1960	1961	1962	1963	1964	1965	1966 ^(c)	1967 ^(c)	1968 ^(c)
DEMAND									
Net Sales—Motor Gasoline.....	274.4	281.6	297.0	315.7	332.6	353.1	372.9	392.3	420.0
—Middle Distillates.....	284.1	289.4	307.1	328.1	336.1	361.6	373.2	392.5	414.1
—Heavy Fuels.....	136.6	140.9	154.5	162.8	182.7	211.8	220.5	244.6	258.2
—Other Products.....	103.0	106.2	109.1	121.0	130.5	138.2	155.2	161.5	170.3
Total Net Sales.....	798.1	818.1	867.7	927.6	981.9	1,064.7	1,121.8	1,190.9	1,262.6
Industry Consumption and Losses.....	61.9	69.0	70.5	70.5	74.6	79.9	81.0	86.0	88.6
Total Domestic Demand.....	860.0	887.1	938.2	998.1	1,056.5	1,144.6	1,202.8	1,276.9	1,351.2
Exports—Crude and Equivalent.....	113.0	133.9	236.0	248.2	277.9	295.6	347.6	414.8	460.0
—Products.....	9.9	10.8	16.4	16.9	25.5	29.7	38.1	46.1	44.4
Total Demand.....	982.9	1,081.8	1,190.6	1,263.2	1,359.9	1,469.9	1,588.5	1,737.8	1,855.6
SUPPLY									
Net Production—Crude and ngl.....	543.9	643.1	736.2	786.5	851.3	920.7	1,012.9	1,108.3	1,185.0
Imports—Crude and Equivalent.....	343.0	365.1	368.5	404.8	392.3	395.1	434.4	447.0	494.6
—Products.....	96.2	80.7	83.0	92.7	111.8	162.5	163.8	187.1	210.8
Other Materials Used.....	0.7	3.6	0.9	0.5	0.8	0.5	0.5	0.5	0.8
Total Supply.....	983.7	1,092.5	1,188.6	1,284.5	1,356.2	1,478.8	1,611.6	1,742.9	1,891.2
Inventory Change and unaccounted for.....	+0.8	+10.7	-2.0	+21.3	-3.7	+8.9	+23.1	+5.1	+35.6
Runs to Still.....	766.5	811.3	849.3	908.3	935.5	972.8	1,042.0	1,066.8	1,139.0

(c) revised
 (c) preliminary
 (c) estimated

3 December, 1968

CANADA'S TRADE IN ENERGY COMMODITIES
(Millions of Canadian Dollars)

	1960	1961	1962	1963	1964	1965	1966	1967	1968 ^(e)
<i>Petroleum</i>									
Exports.....	101.9	170.8	236.2	249.8	286.7	301.0	357.0	438.8	494.5
Imports.....	399.1	398.1	410.4	449.5	446.2	473.4	487.9	518.1	595.9
Balance.....	(297.2)	(227.3)	(174.2)	(199.7)	(159.5)	(172.4)	(130.9)	(79.3)	(102.4)
<i>Natural Gas</i>									
Exports.....	21.8	41.9	77.7	81.3	101.7	104.2	110.3	133.0	158.4
Imports.....	1.9	2.0	2.0	2.5	4.2	7.5	20.1	31.5	36.0
Balance.....	19.9	39.9	75.7	78.8	97.5	96.7	90.2	101.5	122.4
<i>Petroleum and Natural Gas</i>									
Exports.....	123.7	212.7	313.9	331.1	388.4	405.2	467.3	571.8	652.9
Imports.....	401.0	400.1	412.4	452.0	450.4	480.9	508.0	549.6	632.9
Balance.....	(277.3)	(187.4)	(98.5)	(120.9)	(62.0)	(75.7)	(40.7)	22.2	20.0
<i>Coal and Coke</i>									
Exports.....	8.3	10.8	10.2	11.5	13.3	13.9	14.8	16.4	20.4
Imports.....	75.8	76.4	77.6	92.0	91.3	135.2	152.3	151.2	172.0
Balance.....	(67.5)	(65.6)	(67.4)	(80.5)	(78.0)	(121.3)	(137.5)	(134.8)	(151.6)
<i>Electrical Energy</i>									
Exports.....	15.2	14.6	16.3	15.9	18.0	16.9	19.8	19.1	17.2
Imports.....	1.4	6.1	11.6	11.4	13.1	14.3	13.9	16.4	17.0
Balance.....	13.8	8.5	4.7	4.5	4.9	2.6	5.9	2.7	0.2
<i>Total</i>									
Exports.....	147.2	238.1	340.4	358.5	419.7	436.0	501.9	607.3	690.5
Imports.....	478.2	482.6	501.6	555.4	554.8	630.4	674.2	717.2	821.9
Balance.....	(331.0)	(244.5)	(161.2)	(196.9)	(135.1)	(194.4)	(172.3)	(109.9)	(131.4)

^(e) estimated

Bracketted figures indicate negative quantities

26 November, 1968

HOUSE OF COMMONS

STANDING COMMITTEE ON NATIONAL RESOURCES AND PUBLIC WORKS

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OF
PROCEEDINGS AND EVIDENCE

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ALISTAIR FRASER,
The Clerk of the House.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 12

TUESDAY, MARCH 4, 1969

Respecting

Main Estimates (1969-70) of the Department of Public Works

APPEARING:

The Honourable Arthur Laing, Minister of Public Works

WITNESSES:

(See Minutes of Proceedings)

THE QUEEN'S PRINTER, OTTAWA, 1969

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ON
NATIONAL RESOURCES AND PUBLIC WORKS

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Messrs.

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⁸ Gilbert

⁵ Lind
² Langlois
Mahoney
Marchand (*Kamloops-
Cariboo*)
Moores (*Bonavista-
Trinity-Conception*)

¹ Orange
Paproski
Ritchie
Roy (*Timmins*)
⁴ Skoberg
Sulatycky—(20).

(Quorum 11)

J. H. Bennett,
Clerk of the Committee.

Pursuant to S.O. 65(4) (b)

¹ Replaced Mr. Crossman February 11, 1969.

² Replaced Mr. Breau February 11, 1969.

³ Replaced Mr. Downey March 3, 1969.

⁴ Replaced Mr. Benjamin March 4, 1969.

⁵ Replaced Mr. Chappell March 4, 1969.

⁶ Replaced Mr. Deakon March 4, 1969.

⁷ Replaced Mr. Hogarth March 4, 1969.

⁸ Replaced Mr. Harding March 4, 1969.

ORDER OF REFERENCE

HOUSE OF COMMONS
THURSDAY, February 20, 1969.

Ordered,—That Votes 1, 5, 15, 20, 25, 40, 45 and 50 relating to the Department of Energy, Mines and Resources;

Votes 55 and 60 relating to the Atomic Energy Control Board;

Votes 65, 70, L15, L20, L25 and L30 relating to Atomic Energy of Canada Limited (Research Program);

Vote 75 relating to the Dominion Coal Board;

Vote 80 relating to the National Energy Board; and

Votes 1, 5, 10, 15, 20, 25, 30, 35, 40, 50, 55 and 60 relating to the Department of Public Works be referred to the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER,
The Clerk of the House of Commons.

MINUTES OF PROCEEDINGS

TUESDAY, March 4, 1969.

(12)

Text

The Standing Committee on National Resources and Public Works met this day at 8:05 p.m., the Chairman Mr. Hopkins presiding.

Members present: Messrs. Aiken, Comeau, Cullen, Gibson, Gilbert, Hopkins, Hymmen, Lind, Langlois, Marchand (*Kamloops Cariboo*), Orange, Paproski, Ritchie, Roy (*Timmins*), Skoberg—(15).

Also present: The Honourable Arthur Laing, Minister of Public Works; and the Honourable Théogène Ricard, M.P.

Witnesses: From the Department of Public Works: Messrs. L. Lalonde, Deputy Minister; G. B. Williams, Senior Assistant Deputy Minister; J. A. Langford, Assistant Deputy Minister (Design); and L. V. McGurran, Director, Financial Services.

The Order of Reference was read and the Chairman presented the Fourth report of the Subcommittee on Agenda and Procedure.

Your Subcommittee on Agenda and Procedure met on Friday, February 28, 1969, with the following members present: Messrs. Beaudoin, Comeau, Harding, Hopkins, Hymmen and Langlois. After discussion it was agreed to make the following recommendations to the Main Committee:

1. That in examining witnesses, the same procedure be followed as at previous meetings,—approximately 10 minutes be allowed each member for questioning, with no supplementary questions allowed on the first round. The Chairman to use his discretion respecting supplementary questions on the second round.
2. Meetings of the Committee should last not longer than 2 hours, preferably one and one-half hours.
3. That permission be sought to adjourn from place to place to visit Chalk River, the Fuels Research Centre on the Corkstown Road and the Canada Centre for Inland Waters at Burlington, Ontario, when the estimates of the appropriate Branch are before the Committee.
4. That the Estimates of the Department of Public Works be considered first, followed by the Dominion Coal Board. The order of consideration of the estimates of Energy, Mines and Resources, Atomic Energy Control Board, Atomic Energy of Canada Limited and National Energy Board to be decided later.

On motion of Mr. Marchand the recommendations in the above report were adopted unanimously.

The Chairman then called Item 1—General Administration of the Estimates 1969-70—Department of Public Works and the Honourable Arthur Laing introduced his associates and read a statement.

Following the statement, the Minister of Public Works and his associates were questioned.

At 10.00 p.m. the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, March 4, 1969

● 2007

The Chairman: We now have a quorum and I would like to call the meeting to order. First of all, I am going to ask the Clerk of the Committee to read the order of reference for this Committee.

The Chairman also read the Fourth Report of the Sub. Committee on Agenda and Procedure.

(See Minutes of Proceedings)

The Chairman: Thank you, Mr. Bennett.

I would like to welcome back all members to our first Committee meeting for 1969. I think it would be very appropriate at this time if I extended a special welcome back to Mr. Aiken after his illness. One thing about Parliamentary life, whether we sit on the Opposition or the Government side, when one of the members gets in difficulty, there is a feeling of concern among the rest of us and we certainly are glad to have you back with us, Gordon.

● 2010

Mr. Aiken: Health difficulties.

The Chairman: Yes.

(See Minutes of Proceedings)

The Chairman: I now call Item 1:
Department of Public Works

1. General Administration, including grants as detailed in the Estimates—\$23,940,000

I invite the Honourable Arthur Laing, Minister of Public Works, to introduce his associates and address the Committee. I think, first of all, Mr. Laing it is only appropriate that I welcome you to the Committee on behalf of the members. We are glad to have you with us.

Hon. Arthur Laing (Minister of Public Works): Mr. Chairman and gentlemen of the Committee, I want, first of all, to introduce the gentlemen who are up here at the front with me. Mr. Lucien Lalonde, who is Deputy Minister of the Department; Mr. G. B. Wil-

liams, who is Assistant Deputy Minister in charge of Operations and Mr. J. A. Langford, who is Assistant Deputy Minister (Design). They will be answering your questions to a far greater extent than I, but if they are directed at me I shall endeavour to answer them.

I would like to make a short statement now, Mr. Chairman, if I may.

This is the first opportunity I have had to appear before you in my capacity of the Minister of Public Works, succeeding the hon. George McIlraith. I would like now to make a few general comments with respect to the organization and present programs of the Department in the fields of accommodation, engineering and construction.

Under the guidance of Mr. McIlraith, the Department of Public Works underwent a major reorganization following the recommendations of the Glassco Commission. A firm of management consultants during 1965 made a thorough study of the Department's organization and on the basis of their findings a process of reorganization began in 1966 and was basically completed in March of 1967.

The principal feature of this reorganization was the decentralization of operations and authority. The reasoning behind this is to bring the work of the Department closer to those people who are primarily interested in and affected by the Department's activities and to provide a much quicker response by the Department to the needs of the particular community. This is accomplished by a reduction in the amount of communication that was previously required between the local areas and Ottawa thereby saving considerable time and paper work and by allowing more latitude to the regions in the field of design. By doing this, those now charged with the responsibility of design and construction supervision are able to increase the local input based on their familiarity with local climatic conditions, availability and type of

materials, and other particularly local regulations, tastes and customs.

• 2015

I want to interject here that the Department has traditionally tried to be a good tenant and citizen and I would hope that we can consolidate this position. When we go into an area, I am thinking particularly of civic organizations in cities, we want to be a good tenant and a good citizen of that area. We want to abide by the local regulations and the restrictions put upon buildings in those areas.

This has had a very beneficial effect on the Department's relationship with architects and contractors by allowing speedy consultation with men of authority at the local level. It has also improved necessary financial arrangements including prompt payment of accounts.

Although this phase of decentralization has been essentially completed, the Department is continuing to adapt to the new concept and to bring in more efficient procedures as experience is gained.

There is another program now being instituted by the Department in respect of construction standards which goes under the name "modular co-ordination". Details of this concept are being forwarded to contractors, architectural and engineering consultants, and manufacturers. This program will be effective March 31, 1969.

The principle of "modular co-ordination" is that all DPW plans will employ a standard 4 inch module. All construction materials will now be expected to conform to this unit with the resultant elimination of trimming and cutting of materials.

The Department has been complimented by the Canadian Construction Association for bringing this concept into effect and confirms that it should be effective in lowering costs and simplifying the work of all parties concerned.

There is another phase of this Department's responsibility which has become of prime importance. This is in the field of accommodation. The pressures which now exist in this area have become intense and will, without doubt, remain that way for some years to come. This has been caused by a number of circumstances. The obvious one, of course, is increasing government responsibility and the growth of government services.

Another factor, however, is the growing demand for the upgrading and replacement of governmental accommodation. A prime example of this is the temporary buildings that still remain in Ottawa, built during the last war to meet emergency requirements. Also many departments are housed in a number of different locations which is having an adverse effect on their efficiency. This is true not only in the capital region but also in other centres in Canada and the Department has accommodation programs now under way for the major centres of Toronto, Vancouver, Montreal and Winnipeg as well as in many smaller ones.

All these factors have given rise to an immediate need which has led the Department to investigate every means of providing such accommodation in a most prudent manner but at the same time to create and carry out policies which permit the widest versatility and thereby avoid some of the factors which have given rise to the present problem.

One way is to avoid the pattern of constructing specialized buildings for particular departments. We are convinced that the correct approach under present circumstances is to build on the same basis as an entrepreneur; that is, building a structure for unspecified clients. We must provide good, modern office accommodation which can be operated and maintained with economy over a reasonable length of time and which has a reasonable initial cost. This will allow the greatest versatility in accommodation which is proven to be necessary in view of the continuous variation in departmental size and requirements.

This is what we are striving toward in the general purpose office building, one of which is in an advanced stage of construction at Tunney's Pasture and three more of which are planned for Ottawa and Hull.

In coping with this problem, there are two main requirements: time and money. It is possible to alleviate the problem by leasing space, but in the long run the cost will often far exceed that of erecting new buildings and raising the necessary funds immediately. This is reflected in the estimates before you which show not only the requirements for the coming fiscal year but also the total estimated cost of the particular projects.

This is not the whole answer, however, there is a limit to the amount of money which

can be raised each year for construction purposes and so we are, of necessity, obliged to turn to other methods of providing accommodation. Leasing is, of course, one of them. Another way is to enter into arrangements for the building of accommodation by the private sector which conform to government standards and particular requirements and which will then be leased by us on a long-term basis. In some instances it is provided that at the end of the term the government acquires title to the land and building. A competitive price for these methods is assured by going to public tender.

It is not intended that I should leave the impression that the leasing of accommodation is essentially undesirable. There are times when leasing space is the logical, proper and most economical thing to do. It is the right way of taking care of short-term moves and may be prudent even on long-term in times of ballooning construction costs.

● 2020

Another area of our responsibility involves marine engineering and construction. This ranges from small boat harbours and marinas to harbours capable of handling super-tankers and bulk carriers both of which are becoming increasingly important to Canada's economy as a result of the increase in the tourist industry and the rapid alterations in the size and construction of ships.

For the most part, the cost of marine undertakings comes directly out of this Department's budget. There have, however, been a number of cases of shared-cost arrangements where, to encourage the expansion of industry in a particular area, we will provide harbour facilities for particular industrial concerns such as pulp and paper or oil, but under an agreement whereby the firm must pay all or a specified portion of the outlay over a prescribed period of time, with ownership retained by the government and specific provisions laid down concerning public use.

Most industrial undertakings of this magnitude, however, are taken as wholly a government responsibility. I have in mind the harbour works being undertaken at Matane, on the Lower St. Lawrence River, at the Lakehead, where increased facilities for handling shipping are being provided at the Keefer Terminal, and at Vancouver where the deepening of the First Narrows will provide access to the harbour for large bulk carriers

and others having greater draught than the channel can at present accommodate at low tide.

The Department also has in effect a marina policy which has been brought about by the growth of the waterborne tourist industry and one which can be instrumental in encouraging and increasing this industry especially in respect of foreign tourists. This is a shared-cost program under which the government will undertake the dredging of channels and the construction of breakwaters in locations where they are required if a private developer makes a firm commitment to provide specified onshore facilities of the same magnitude and by magnitude I mean the same cost. Each project, however, is subject to specific approval on its own merits. In addition to this policy there is another concerning pleasure craft which provides for the construction of small boat launching ramps not costing more than \$15,000 each.

My last portfolio, as you will recall, was closely connected with Canada's Northland. For that reason, I am pleased to point out to you that the estimates contain provision for maintaining and improving the Northwest Highway System, of which the Alaska Highway forms the largest portion. Included is a sum of \$2 million for the reconstruction of obsolete bridges along the Alaska Highway, and other funds have been allotted to the reconstruction and paving of the portion through Fort Nelson. This latter community will also be provided with a paved highway to its airport.

The Department will continue to be responsible for the operation and maintenance of the Northwest Highway System and continues a responsibility extending to a number of bridges owned by the Department in various parts of Canada and in particular international bridges.

You will see that the federal government is continuing to share with Quebec the cost of reconstruction of Highway 6 in the Counties of Matane and Gaspé North. Funds are also provided for contributions to the provinces under the Trans-Canada Highways Act. The construction period under this legislation terminates on December 31, 1970.

These remarks are intended to give you an idea of the magnitude and scope of the Department's responsibilities which are reflected in the Estimates before you. I am sure

that these gentlemen will be able to give you full and accurate information in respect of these estimates as you may desire or you may wish to address some questions to me.

Mr. Chairman and gentlemen, I thank you.

The Chairman: Thank you, Mr. Laing. I believe I neglected to welcome all the officials who are here with us tonight. I am sorry, gentlemen, it is good to have you along.

At this time I should say I have been given notice that Mr. Aiken wishes to say a few words.

Mr. Aiken: Thank you, Mr. Chairman. First, thank you for your kind words. I hope that a kinder fate befalls this Minister and me than befell the last Minister when we met on Energy, Mines and Resources. Both of us had coronaries following that, but I do not think that was the ultimate result.

Mr. Hymmen: Take it easy.

Mr. Aiken: I want to ask a question of the Minister which relates generally to the navigable waters or the harbours and rivers branch of the Department. About two weeks ago we put the Navigable Waters Protection Act through the House of Commons and I imagine it now has been given Royal Assent. The effect of that Act seemed to be that the Department of Transport was enlarging its field of operations in connection with navigable waters. They eliminated the limit of \$5,000 in connection with structures which might interfere with navigation and in general it was felt that the effect of this legislation was to increase the federal responsibility in very small navigable waters and in very small ports and docks and launching ramps.

• 2025

In contradiction to that your Department as I understood, has always felt they would like to keep away from responsibility as a federal matter over small rivers and streams and lakes, and over the smaller types of wharves and launching ramps. The two philosophies in Transport and in Public Works, which work together on these largely, seem to be at odds. I want to ask the Minister if he can advise us whether this move by the Department of Transport has brought about any reaction in his Department; that is, whether the Department does intend to enlarge its operations in navigable waters and enlarge its dock and

wharf construction programs and also the question of launching ramps which are very marginal. This is something of a policy matter but there are quite a few of us who are concerned at these two apparent divergent views.

Mr. Laing: I may be calling on one of my officials, but I think in the main there is no anticipated collision in our activities out of this. The Navigable Waters Protection Act was administered by the Department of Public Works up till two years ago, at which time it was turned over to Transport. It relates, of course, primarily to the use of waters for navigational purposes; in other words the depth of the ship, the requirements of the shipping area for safety purposes, the requirement for depth, the removal of obstructions, control over obstructions and control over the building of private properties into areas which are normal ship passages. Much of the work, however—I think this has been the history of it—that is determined as a responsibility of the Government of Canada is performed by the Department of Public Works at the request of the Department of Transport. I do not think there is any inclination on the part of the Department of Transport to actually build these things themselves, but certainly the very nature of the Act itself pertains to the passage of ships, which, I think you will agree, is understandably the responsibility of the Department of Transport and not us.

Mr. Aiken: I have a supplementary to that. When members like me go to your department to ask for the construction of a wharf or a navigation facility in a fairly small stream or lake, the general reaction from your Department is, "Well, we are not really concerned with these smaller bodies of water; this was never intended in the British North America Act; our main responsibility is navigation on the ocean, on the lakes and on the larger inland lakes" and we have more or less been led to accept this and the fact that the smaller docks would have to be constructed by municipalities or by the provinces or by someone else.

Now the Department of Transport in effect has said that this is a federal responsibility right down to the smallest stream and the smallest dock. In this manner they seem to have extended the jurisdiction so that you may be asked now to go into a larger field. I

will be the first to make a request of you because there is a hiatus between what is done federally by the Department of Transport and the Department of Public Works and what is done by anybody else, because if you stop nobody else picks it up. I am trying to lead you into saying that you are going to build more facilities on the smaller lakes, if that is what Transport wants to control.

• 2030

Mr. Laing: I am going to let my officials speak to this, but I would be very concerned if the wording of the legislation should be used by either department as a reason to fob off a member when he sees a desirable thing in a riding which may be attuned to tourist business and so on. We do not want that to happen. I will ask Mr. Lalonde to speak to this.

Mr. L. Lalonde (Deputy Minister of Public Works): Mr. Chairman, in replying to that question, I think one has to make a distinction. The purpose and the application of the Navigable Waters Protection Act which was under our jurisdiction until two years ago, was for the purpose really of making sure that nobody, whether it was a public institution or a private one, would obstruct navigation, no matter what the size of the navigable water was, whether it was a lake or a river. I know that from time to time we had to deal with private owners who put up a wharf in a river, let us say, 50 feet wide, that was 40 feet long and this did obstruct navigation.

The only reason the Act was transferred to the Department of Transport was that in accordance with the Glassco Commission report we felt that we should be the construction agency of the government and not the policy-making agency whether the transportation was by land, by air or by water. So it seemed logical that the making of the policy and its application to individual situations should be in the hands of the department which at that time was charged with both air and land policy and that was the only reason for the transfer.

This did not imply that the Department of Transport would take over the construction of wharfs whether they were commercial wharfs or tourist wharfs. They simply are to make sure that navigation by water is protected all over the country. As a matter of

fact, as the Minister has said we still build small tourist wharfs. They have to be small—within the \$15,000 limit—and we still participate in the construction of marinas which always involve some kind of wharfing facilities. I do not think there is a conflict here, but of course, the Department of Public Works no longer has any influence on the policy making. I do not know whether this is what is causing some concern to you.

Mr. Aiken: What really caused me concern was that I thought the Department of Transport had moved in the wrong direction and this would be the place to say so. They were trying to achieve the opposite effect to what your Department was, namely, that you tried to restrict your responsibility to larger lakes and rivers and larger facilities, and yet they exerted their sphere of influence right down to the smallest stream and wharf by removing the \$5,000 limitation. However, I will not press it further at the moment because I have used up most of the time.

I was hopeful that perhaps this was an over-all government policy in which the federal government was going to take greater responsibility for small boat navigation, which brings me to my second question, Mr. Chairman. I have more questions, but I will yield then because there are others who also have questions. I would like to find out about the marina policy, that is the joint policy of the federal government and private individuals, municipalities or private companies who want to build small boat facilities which you do not consider to be your total responsibility. I would like to find out how much is being done, in a general way, under this policy and whether it is considered successful or whether you may have to consider some other means of assisting the small boat operators and the small marinas.

• 2035

Mr. Laing: I will start off on this and you can correct me. I think under the policy so far there have been 300 applications. There have been 20 acceptances, most of which have been completed, and there are 30 other applications that are under active consideration and may be approved. The amount of money for this purpose is not unlimited, but we find that in a great number of instances, people who thought they could live up to the conditions, found upon making further inqui-

ries that they were unable to do so and withdrew the application or could not qualify. The terms of qualification are that we will put in a breakwater, in many instances of rock and we will do the dredging if the private operator, club, municipality, parks board or any such organization will spend a like amount in investing in the marina facilities behind it. Those are the conditions and, as I said, 20 have been effected and there are 30 in active consultation out of a total of at least 300 that were submitted.

Mr. Aiken: Is there a price tag on this?

Mr. Laing: We have not put on a price tag as yet.

Mr. Aiken: Thank you, Mr. Chairman. I have some other questions, but I would like to come back later.

The Chairman: I will put your name on the second round.

Mr. Laing: Might I have a word, Mr. Chairman? We have spent \$1.8 million so far or about \$2 million on these facilities. You asked if there was a limit on each facility. There is one application under consideration now on which we have indicated to the applicant that all other things being equal and provided they make the required investment, we will be spending over \$1 million on this one item. There are \$7 million worth of projects under study now.

Mr. Aiken: Thank you.

The Chairman: For the purpose of first round questioning or comments, I will call on one member from each party represented and from then on in the same order in proportion to the number in each party. Mr. Orange is the next name on my list followed by Mr. Skoberg. On the second round, so far, I have Mr. Comeau, Mr. Gilbert and now Mr. Aiken.

Mr. Orange: Mr. Chairman, I have a number of questions here which like Mr. Aiken's will not, I am sure, be completed on the first round. I think maybe I should start with general inquiries hoping to elicit some information from the Department.

I notice an item in the estimates relating to the Northwest Highway System and specifically the paving in and around Fort Nelson. I would like to ask, as my first question, if the Department has a policy reflecting paving in

and around communities on the Alaska Highway? In addition I would like to know the cost of this per mile, the kind of paving standards they are using and finally some information such as the number of miles and cost per mile with regard to the work being done by the Department of Public Works on dust control in and around Whitehorse. All this information may not be available at the moment, but if you have it I would appreciate it.

• 2040

Mr. Laing: I stand to be corrected if I am wrong as I will be quoting from memory now. We made an announcement last summer with respect to the repair of bridges. There are a great number of bridges that are badly in need of repair and we said we were going to repair 82 bridges in all. I think quite a number of them now have been completed on the highway.

We had an economic survey conducted to, at least, satisfy ourselves regarding the importance of this highway. I must say that as far as the transport of goods is concerned, according to this survey, the Alaska Highway is not increasing in importance, but tending to, in respect of the over-all amount of freight that goes up to that territory, decline in importance. There is still a great deal of importance attached to it for the tourist business, but by and large, as Mr. Orange knows, I think, better than most of us, it is for a great part of the year an uncomfortable and sometimes an unsafe highway.

With respect to Fort Nelson, because whenever the trucks go by they throw a mountain of dust all over the city, we thought we would pave a few miles there to take the dust out of the town. They made representations that at the same time we were paving the three or four miles to take the dust out of the town, we pave the road to the airport which is a very, very active airport today because of the exploration that is going on there. So we now have decided to pave the seven miles to the airport as well.

There is in the works, as I stated in my announcement, a project involving some 20 miles of paving in the immediate vicinity of Whitehorse together with another stretch somewhere—I think another five miles in all. There is also a proposal to continue the work in respect of dust laying—the experimental work that is going on in this regard—to a total of \$1.7 million over the next three years.

Mr. Orange: Then, Mr. Chairman, I have a question for the Minister which possibly might put him in an unfair position because he also operated a highway system when he held the portfolio of Indian Affairs and Northern Development. Why should there be a Canadian program approved by one arm of government with respect to communities on one highway system—we all know the dust problems that are caused by highway transportation—when some of the other communities on your former highway system, sir, that have a similar serious problem do not benefit in the same way? I just cannot equate in my mind why there would be a policy, on one hand, involving paving in and around some communities on the one highway and not a similar policy affecting the communities on the other highway system which happens to be in the Northwest Territories?

Mr. Laing: Now you have boxed me in, Mr. Williams will reply.

Mr. G. B. Williams (Senior Assistant Deputy Minister): I think it is fair to say that it would be desirable for the people who operate the highways and the people who live by them if we could dust lay them all. The hue and cry was up for dust treatment, particularly on the Alaska Highway and the Northwest Highway System, and we were asked if it would be economically feasible to undertake a dust layer treatment on the total mileage of it in terms of providing a better riding surface and conserving the gravel that we were putting on each year. The economics of it just are not fair. The grade, the soil conditions and the type of terrain are such that the highway just will not take a dust layer. Therefore, on those portions that required it the most and where the pre-treatment could be done, we developed a procedure for a dust

● 2045

layer which is totally different than the procedure you would use in most of Saskatchewan where more of it has been done than anywhere else, or in Manitoba or in Alberta, south of the Peace River. I think we have made some real progress in the last year, particularly on the Northwest Highway System. I am quite sure that the information we have and what we are doing is known by the territorial people in relation to their roads and equally by our people who are dealing

with similar groups in the Mackenzie and that what we learn will be passed on to the others.

Now, with regard to the economics of it and whether their dollars are best spent on this or on something else they require, I cannot say. That is a judgment they would have to make. In our judgment on the highway as it is now, the paving with the extra haul that is coming from the mining on the Whitehorse section in relation to the maintenance we have done, the reconstruction and the paving of it is warranted. Our aim will be—it is a deflection design technique—to provide a standard of pavement which will take those loads, but we will still have to have a reservation for that spring break up.

Mr. Orange: I will not continue on this subject any longer. I know the problems, I know the limitations and I know the alternate necessities. One figure I would like to have from you if I could—if you do not have it now you can get it at a later date—is really the cost per mile of the dust control program which you have instituted in and around Whitehorse primarily where, I think, conditions probably would be reasonably close to those existing in the Mackenzie.

Mr. Williams: I would like to give you figures on more places than Whitehorse. Whitehorse is a peculiar situation in that it has had many kinds of treatments. I would like to give you a few other locations as well, if you do not mind.

Mr. Laing: May I ask Mr. Orange if he agrees with me that the opening up of the new mines is going to place an immense burden upon us for the maintenance of those roads to accommodate the mines and I am speaking particularly of Anvil. We are going to find that the cost of maintaining the roads for those heavy trucks is going to skyrocket.

Mr. Orange: In this, Mr. Chairman, there is no question. I agree with the Minister completely. I really am thinking in terms of creature comfort for the people in and around some of the communities where the traffic is probably equally as heavy, maybe not in terms of the size of the vehicles, but because of the spread-out nature of the community. For example, in the community of Hay River where the dust is a very, very serious problem.

However, I would like to move on to another subject if I still have time in connection

with dredging along the Mackenzie River. I wonder, in view of the increased traffic which will be on the river as a result of the Prudhoe Bay and other oil and, hopefully, mineral developments, whether the Department has undertaken any studies to assess if the equipment that is now there—the dredges they now have—is adequate to keep the river open. Added to this, of course, is the fact that there are communities on the river, and I use Fort McPherson as an example, where you are continually dredging almost every summer.

My reason for asking this question is that, particularly in the vicinity of Sans Souci Rapids, I have been told you have a program which will take a number of years to complete. The reason it will take a number of years, according to the information that is available to me, is because the kind of equipment which DPW use for dredging is not really as adequate as it should be.

Then I would like to ask the further question, whether any thought has been given, not only to making a study of this, but possibly turning this process over on contract to private enterprise?

Mr. Laing: I just want to say this. We have had it drawn to our attention. Part of the reason for the low water in the Mackenzie is the fact that the Peace River Dam is completed and that reservoir now is being filled, with the result that the water on the Peace River has dropped a very great deal. We have had some consultations through the water branch in an endeavour to consult with B.C. on whether or not it is necessary to fill that reservoir as quickly as they appear to be doing. I think Mr. Orange is probably aware that the water dropped around Peace River Crossing very, very perceptibly and this is water that reaches the Mackenzie. We attribute part of the difficulty there to the fact that

• 2050

the Province of British Columbia seems anxious to fill the reservoir quickly.

With regard to the dredging work, the work that is being done and the capacity of dredges, Mr. Williams will reply.

Mr. Williams: It is quite true that the dredges we have there and have operated there have been inadequate in the sense that once they are in there they are not movable. They are on the Mackenzie and there is

nowhere else you can put them. We were never in a position to be over extended.

We have recently sent in a specialist to assist the region in doing an over-all study on the Mackenzie for the dredging. We have an immediate workload with work being done at Sans Souci by the Northern Transportation Company. They have an immediate problem. They want to double their tonnage in connection with Great Bear. We are trying to double what we can take with our plant. We did examine the situation to see whether any preliminary drilling and perhaps blasting in the rock portions could be done this winter, but this was not really practical. However, we are planning for it so that we will be able to clean it out in the second year.

The purpose of the over-all study that we are doing will be to recommend either that we change plant or concentrate the plant we now have to a section of it and to see if we can generate any interest in the private sector for the dredging. We recognize that to move plant in we may get into a situation where we are going to have to call dredging on a unit basis with a guaranteed minimum and perhaps do it on a two year basis or even more because we cannot move plant in and out of that situation readily, but that is our objective.

Mr. Paproski: Mr. Chairman, may I ask a question supplementary to Mr. Orange's, or do you take any supplementaries?

The Chairman: I am sorry, not on the first round of questioning and we are still on the first round. Mr. Skoberg is next.

Mr. Skoberg: Mr. Chairman and Mr. Minister, I would like to continue with the dredging aspect of it for a moment. I wonder whether the Minister could say what size a river should be before the Department will assist in dredging operations? I have in mind some of the smaller rivers in the various provinces. What assistance could they expect and under what form could they expect this assistance?

Mr. Lalonde: Mr. Chairman, it depends on what Mr. Skoberg is referring to. We are involved in dredging for only two kinds of operation, commercial and navigation as well as the dredging under the marina policy for pleasure crafts. We do not dredge all rivers, for instance, where there is no commercial

navigation and we do not enter into a specific agreement with the developer of a marina.

Mr. Skoberg: I gather from that if there are pleasure crafts using a particular water course there may be a possibility of assistance in dredging?

Mr. Lalonde: No, the only dredging we do under the marina policy is the dredging of the approach to a marina. We do not dredge a whole river so that small boats, perhaps with a larger tonnage, can go through that particular river.

Mr. Skoberg: I thought we might get a little help in the Moose Jaw River.

I have another question, Mr. Chairman and Mr. Minister. What space, if any, now leased by your Department is not being occupied in the City of Ottawa or in any other area in Canada?

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Mr. Laing: I think a question dealing with this was answered on the order paper in very great detail. I saw a rather alarming headline in the local papers and I computed it in relation to our total footage and it is less than one-half of 1 per cent. Any landlord in any city in Canada who has vacancies of less than one-half of 1 per cent is a lucky guy, but the total figure looked rough when it was in the headlines. We have a tremendous amount of space rented in Ottawa at the present time. As a matter of fact, we are paying \$18 million a year for rented space.

Mr. Skoberg: You do not have any vacancies right now?

Mr. Laing: There are always some. As I said, when the figures came out it was less than one-half of 1 per cent, which is a very low figure for any landlord.

Mr. Lalonde: You have to realize, Mr. Chairman, that continually we have departments adjusting in size and moving from one building to another. So, let us say, when we move a department from one building, another department will move in. There is a period of time while we are readjusting the space to meet the needs of the new department—there has to be a time period during which those repairs are being made—during which there is, in fact, a temporary vacancy, but that is the only time we run into that sort of problem.

Mr. Skoberg: Mr. Chairman and Mr. Minister, I have another question. I noticed in your statement, Mr. Minister, a reference to management consultants. Is it the policy of your particular Department to call for tendered bids or invitational bids on management consultant projects?

Mr. Laing: I would think it is invitational. I have tried to find out what the policy of the Department has been—I have made an honest endeavour to find out. I have looked back across the years and have found there is a very, very wide listing from all parts of Canada of people who have written in and asked to be considered or who have been recommended by various people. My people have endeavoured and still endeavour in all cases to give me the best information they can on the record of these people, the jobs they have done for the government in the past, whether they did them well, medium well, or whether there were any errors. As far as I can see in looking back at it, there is a group of people whom they approve in their minds, and generally speaking, the habit has been to rotate them because I can find a person who had a consulting job four or five years ago and who has been recommended to come in again. I have not broken that habit as I think it is probably pretty sound.

Mr. Skoberg: I think we appreciate the fact, of course, as was suggested in the housing committee that the new contractors are changing considerably. I would presume that the new management consultants would be forming new consulting agencies and it would appear there could be room here for considerable doubt in the minds of a lot of people in this country. I just wonder whether or not your policy could be expanded to make sure that the invitation is not restricted to a specific consulting firm.

Mr. Laing: You do not mean management consultants, you mean consulting firms in respect of the building of buildings.

Mr. Skoberg: I am referring to all consultants, management or building.

Mr. Laing: All consulting firms. I agree with you. In the last 10 or 15 years in Canada we have had a number of new architects who had never been heard of before, suddenly blossoming out into the scheme and unless you pay attention to those who come on the scene with new imaginative ideas, you will

never change. I agree with you and we are trying to keep abreast of that, too.

Mr. Skoberg: On page 3, Mr. Chairman and Mr. Minister, you refer to:

the increasing government responsibility and growth of government services

Is there a decentralization of authority under your Department in the various sections with which you are concerned?

Mr. Laing: In the regions that have been created?

Mr. Skoberg: Yes, is this true?

Mr. Laing: Yes.

Mr. Skoberg: But within your Department in Ottawa is there a decentralization of authority? Are you spreading out the work and giving heads of departments, as such, more responsibility?

Mr. Laing: Do you want to answer that, Mr. Lalonde?

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Mr. Lalonde: It is difficult to answer this specifically. We are trying, since we have reorganized, to minimize as much as it is humanly possible the need for everything to come to the Deputy Minister for a final decision and then to the Minister. The volume of work, as you will realize if you look back 10 years, in the Department has increased tremendously and it is just physically impossible and would only create inertia if we continue to operate on a centralized basis. After the consultants recommended decentralization, we studied this and decided that centralization is only effective if you delegate financial authority, and this we have done. At headquarters the assistant deputies and the heads of various branches have delegated authority. I, in turn, have delegated to the regional directors most of the financial authority which the Treasury Board allows me.

Mr. Skoberg: Thank you.

Mr. Laing: In other words, the policy is agreed upon here and the money is apportioned to the various areas for expenditure. After that the man in charge of the region had the same power to expend money as the Deputy has after policy is set.

Mr. Skoberg: Dealing with the bottom of page 4, Mr. Laing, are there any examples

where your Department now has entered into arrangements with the private sector to construct buildings with the ultimate view of owning the land and building, as suggested here?

Mr. Laing: I will have to ask my officials for some instances of that.

Mr. Lalonde: We have asked entrepreneurs, through the use of public bids, to put up buildings which we then lease for a specific period. We have developed on paper a method to ask for bids which would enable us eventually to own the building but we have not yet asked for tenders on that basis. We propose to do so very shortly.

Mr. Skoberg: As yet there are no examples in this regard?

Mr. Lalonde: No.

Mr. Skoberg: This is my last question Mr. Chairman. On our trip to the Maritimes, wherever we went we ran into the problem of the local authorities not knowing whether to deal with your Department or the Department of Transport in regard to harbours and improvements to harbours, docks, facilities and so on. In your considered opinion, do you not believe that it is more reasonable to put the Harbours and Rivers Engineering Branch services either under the Department of Transport or bring the National Harbours Board under the Department of Public Works? I believe you can appreciate the situation that exists in the minds of the people as you tour throughout the country about trying to find the person in authority.

Mr. Laing: They may not know who to approach but they must be trying both because they certainly are writing us.

Mr. Skoberg: I would like to ask then further, at many of these places the provision of facilities for handling containerization traffic is a major concern. They are really concerned about this particular point. Do you believe that under the Harbours and Rivers Engineering Branch services that the engineering for providing the services for containerization comes within the scope of the Department of Public Works?

Mr. Lalonde: I think you have to make a distinction there between policy, once again, and the construction; the engineering and construction, design, supervision and every-

thing else. Anybody interested in a specific project may apply, let us say, to the Department of Fisheries for a fishing wharf. Somebody else in the same area may be interested in using, perhaps, the same wharf for commercial purposes. That means they have to go to different departments. They cannot go to the Department of Transport or to the Department of Public Works with a fishery problem.

We are supposed to be a service agency to provide, first, consultation on the engineering and construction side and then, carry out the design and the supervision of the construction for the other departments who are really our clients. I do not know that there is any way there can be one agency about which everybody having different interests can say, "We will go to that department and they will

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cover all aspects of the policy." We really serve the other departments in this field but we do not make the policy. We do not tell the Department of Fisheries where they should put up a fishing wharf.

Mr. Skoberg: Can you, Mr. Laing, appreciate the situation that the people in the country are facing with the varied programs before them? "In one area they have to deal with the Department of Transport, in another area, they are dealing with the Department of Public Works and in another area with the Department of Fisheries. Rather than have a hodgepodge of departments mixed up in somewhat the same facility there must be room to consolidate these departments and the authority therein so that the people in these various areas know which department to deal with and what can be done for them. I believe that serious consideration should be given to the problem of which department will look after containerization.

Mr. Laing: There is a tremendous amount of publicity nowadays on containerization and there is a tremendous amount of hope in containerization. More than one port on the East Coast is hopeful of having containerization facilities concentrated in its area.

An hon. Member: You better believe it.

Mr. Laing: I do not think that our Department is in a position to give an idea of the magnitude of containerization, that is a matter for the Department of Transport and I

think probably in a sense the Department of Trade and Commerce. As an instance of this, because the Japanese are giving evidence of being heavily interested in containerization to Vancouver, the National Harbours Board some three weeks ago sent a group of people to Japan including Captain Johnson of Vancouver, the National Harbours Board Port Manager. He took three or four other people with him and they come back with a report on their concept of what was going to be required in Vancouver harbour.

I think I would like again to confirm what my Deputy said, that if they decide a certain construction should be made in the harbour in respect of containerization we could likely be asked to be the service agency to build it. However, I do not think we are in a position or have the knowledge to determine whether or not it is justified at this time.

Mr. Skoberg: I am not asking for policy, Mr. Laing.

The Chairman: I have Mr. Comeau, Mr. Gilbert, Mr. Aiken, Mr. Lind, Mr. Paproski and Mr. Hymmen on my list.

Mr. Comeau: Mr. Chairman, before I go into my questioning, are we allowed supplementaries now?

The Chairman: I have possibly made an error here in naming Mr. Aiken as soon as I did because actually he should be on the official second round and I have him listed here after Mr. Gilbert. So if I may withdraw that commitment, Mr. Aiken, I will recognize Mr. Comeau, Mr. Gilbert, Mr. Lind then Mr. Paproski, which will leave us on the first round for the next four speakers.

Mr. Aiken: I certainly will be glad to yield my position to Mr. Paproski.

Mr. Paproski: Mr. Chairman, I have another committee meeting to attend and I only have two simple questions to the Minister. May I put them now?

The Chairman: Would you like to substitute for Mr. Comeau and I will put his name in your place?

Mr. Paproski: I am substituting for him. He is yielding the floor to me.

The Chairman: No, he is on his second round.

Mr. Langlois: On a point of order if I may Mr. Chairman, I think, having been in the

same position as Mr. Paproski, that he should ask his couple of questions and then he could go on with other very important duties.

Mr. Paproski: Thank you.

The Chairman: That is what I was going to suggest. With the full agreement of the Committee we will give him permission to ask his questions.

Mr. Paproski: Okay. Let us not waste any more time; let us get with it.

Mr. Laing: Remember, you said "simple".

Mr. Paproski: Very simple. First, you mentioned, Mr. Laing, the sum of \$2 million for the reconstruction of the obsolete bridges on the Alaska Highway. Naturally, when you fix up the obsolete bridges you have to fix up the obsolete roads and I hope consideration will be given, not only to the Northwest Highway System but to the system right into Edmonton. This is a very important part of the whole system about which nobody has really taken the initiative. This comes up yearly as you know, and there seems to be a continuous reluctance on the part of the government to do anything about it, yet, this is a most important system because of the heavy traffic including transportation by big trucks and so on.

Mr. Laing, at one time—it may have been in your last portfolio—you said. "This is the greatest country." I think you even had the stock market going crazy, if I recall. . .

Mr. Laing: You can stop now.

Mr. Paproski: Yes. From Edmonton to this area needs better highways and I hope that perhaps consideration will be given to this aspect, sir.

Mr. Laing: I think you are more concerned about the highway that leads into Hay River.

Mr. Paproski: That is right.

Mr. Laing: And that portion of the highway south of the 60th parallel which was originally built by Alberta and the Government of Canada jointly. . .

Mr. Paproski: With the United States, right.

Mr. Laing: I think there is a general feeling now that that portion of the highway is not as well kept as the portion north of the 60th parallel.

Mr. Paproski: That is right.

Mr. Laing: I think that is going to change because I think there is going to be an Alberta highway from High Level across to the northwest corner of Alberta. The town of Manning in that area is very prosperous today and a tremendous amount of wheat is coming out of there, as you know.

Mr. Paproski: There still seems to be a reluctance on the part of Alberta to undertake this all by itself. They need some financial help from the federal government. This is the type of feedback I have received and I think it is a part of a large system which the federal government should perhaps take into consideration. . .

Mr. Laing: I want to tell you that Edmonton alone at the present time is selling \$50 million per year into the Northwest Territories.

Mr. Paproski: I know and that is great, but we want to sell more. Anyway, we will go to another area. My other question concerns the building being constructed by Bell Telephone here. It is my understanding that the government has leased a few floors in this new construction?

Mr. Laing: I am told, no.

Mr. Paproski: Who designs most of your buildings now? You mentioned, I think, that there were new architects. Is this assigned by your Department or would we call this patronage or what would you like to call it?

Mr. Laing: The Deputy Minister tells me that it is wise selection.

Mr. Paproski: Wise selection, I see.

Mr. Gilbert: Careful selection.

Mr. Paproski: Is it at all possible for the Deputy Minister to . . .

Mr. Laing: He did not say that in all seriousness.

Mr. Paproski: All right. I think the design is getting better, yes. These must be some good architects from western Canada. I would like to know who is receiving some of this work. If you could ask Mr. Langford or one of your subordinates. . .

Mr. Langford: Do you want a list of people?

Mr. Paproski: If I could have this I would appreciate it, at your leisure.

I have one last question. How many on your staff are bilingual? I do not expect you to answer this now. I want to know how many bilingual people there are in the upper level of your organization. Perhaps you could take this notice and let me have the answer later.

Mr. Langford: Good.

Mr. Lalonde: We have, Mr. Paproski, made a study of this and we have all the figures. I will get them for you for the next meeting.

Mr. Paproski: Thank you very much.

Mr. Comeau: Mr. Chairman, I would like to follow up a couple of questions that have been asked by Mr. Skoberg and Mr. Paproski dealing again with these public buildings. I did not quite understand what you said about the one-half per cent awhile ago in answer to a question by Mr. Skoberg. I am under the impression that perhaps a month or so ago, a picture of the Minister appeared with an article about a new public building. I assumed it was completed and there had been a considerable length of time from when the construction was completed until it was occupied. Is this a fact? Do you know what I am talking about?

Mr. Laing: We have had some difficulty with people from whom we have rented buildings who say, "The building is ready to go into now", and we have found that it is not ready to go into and they have wanted the starting date on the lease different from what we want. We have had some difficulty of that kind.

The answer, however, to the question on the order paper, which was the basis of my reply on that particular day, indicating the amount of space vacant and unused although rented at that time was one half of 1 per cent of the total space we have occupied in Ottawa. I think that is very low for any landlord. In all those cases, Mr. Chairman, this was not new space. All the space that was vacant at the time the answer was given represented changes in occupation in space already rented.

Mr. Comeau: I am sorry that I cannot find it but at that time I thought it represented a considerable amount of money. Maybe on the date the question on the order paper was answered that might have been the case but this was, perhaps, a month ago or two

months ago. It represented a considerable amount of money.

Mr. Laing: There was a story in the newspaper that 15,000 square feet remained unoccupied from a certain date to a certain date.

Mr. Comeau: Perhaps that is so, yes. Another question I would like to deal with the matter of tenders for contracts. I want first of all to state publicly that from looking at the estimates, especially the estimates of Nova Scotia including the harbour improvements, I have been quite lucky. I want to thank the Minister because most of the improvements are in my constituency. I do not know how it happened.

Mr. Langlois: It will not happen again.

Mr. Comeau: It probably will not happen again but I simply want to thank him publicly before I get on to my questioning. However, I am wondering, Mr. Laing, how tenders are allotted or what is the policy regarding tenders? Are these especially for harbour wharfs, breakwaters and such facilities? Are these public tenders? Do you try to give these to local people or who is allowed to tender?

Mr. Laing: In my experience every tender form that has been put before me has been allotted to the lowest tender with the exception of one, which happened the other day, where the man was manifestly not quoting on the same thing because he gave a price almost half of all the rest. In every other instance, the low tender has been successful.

Mr. Comeau: But are all contracts now under your Department put out to tender?

Mr. Laing: They are not all, no.

Mr. Comeau: What about as far as wharfs are concerned?

Mr. Laing: There is work done without tender.

Mr. Comeau: How large does the contract have to be?

Mr. Laing: Mr. Williams will speak to this.

Mr. G. B. Williams (Senior Assistant Deputy Minister, Department of Public Works): The Public Works Act requires that items in excess of \$15,000 must be by public tender unless there is an emergency situation. In practice in the department is that the district or region can invite three or more bids or

they can call public tenders up to \$5,000. Whether they invite bids depends on the time factor and the availability of people to bid. If there are a lot of people interested they will go to public tender. In some cases they may go down as low as \$200, depending on whether it is an easy one to write a specification for and get out to public tender or whether it is a complicated job.

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Between \$5,000 and \$15,000 they are public tenders, again unless it is an emergency situation. The public tender is advertised in the local newspapers and posted in the local post offices. If people have been inquiring about the work they are notified and public tenders are received at a specified time and a specified place and are opened then.

Mr. Comeau: So projects in excess of \$15,000 are public tenders. Between \$5,000 and \$15,000 they are also public tenders as much as is possible. Below \$5,000 you say you invite tenders. Who is invited?

Mr. Williams: I think even below \$5,000 the majority are still public tenders but the regional director is permitted to exercise discretion. He can invite tenders if a situation exists where there is not much competition or, if he is in a hurry to get the job done quickly, he can invite some people he knows are available and can do the work. In such a case he must have at least three tenders.

Mr. Comeau: He must have at least three tenders?

Mr. Williams: Yes, that is correct.

Mr. Comeau: My other question would not be fair really. Do you mean to tell me that these tenders are under the authority of the regional offices?

Mr. Williams: Yes.

Mr. Comeau: Up to what amount?

Mr. Williams: Up to \$5,000. Actually their authority to do works is up to \$25,000 within the total budget they have. The contract regulations, however, are superimposed onto the actual authority. Up to \$5,000 the regional director can invite, that is his authority, but as I say, in most cases he still calls public tenders.

Mr. Comeau: It is this inviting tenders that I am not sure of. I know I submitted some companies, some contractors, to the Minister

a while back and I was told by the Minister that they were placed on the list, I guess for inviting tenders, at least this is what I gathered. I know, however, that recently, for example, there was a contract out and one of these companies was not invited. I was wondering if you just invite three or again is it within the policy that you feel there are only a certain number of contractors that can do this work.

Mr. Williams: No. It would depend on whether the contractor had the equipment and the experience to do the work. Also, if there is a job for \$500 or \$1,000, they will not invite bids from six, they will invite from three or four rather than take in the whole list. In this case they rotate; if the fellow has a job he is not invited on the next one.

Mr. Comeau: Is it possible, Mr. Minister, to get a list of these tenders for the members? Is it possible to get a list or do the regional offices have this under control? Is it possible for us to obtain a list of the tenders that are going out as they are advertised publicly?

Mr. Williams: I cannot give you a list in advance.

Mr. Comeau: No, when the tender comes up, for example, you know that it is going to be a public tender. Is it possible for myself and for other members of the House to obtain a copy of this?

Mr. Williams: Yes, if you tell us which one you want or which ones you are interested in we can tell you when the tenders go out.

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Mr. Comeau: Well any one that interests my constituency anyway.

Mr. Williams: They are published in the local newspapers. In some cases there is no newspaper in which to publish it and in such case it is posted in the post office. If it is harbour works the notice is frequently posted at the wharf as well as at the local post office.

Mr. Laing, we could provide a list when there is a public tender going out. If you wish to so instruct we can send a notice of that tender out.

Mr. Laing: I have no objection. We want the best price.

Mr. Comeau: I am very glad to hear your comments, Mr. Laing, and those of your

assistant, because your Department has been labelled in the past, not by me, but by other reports as the department in which patronage was most prominent, I should say. I am very interested in this and I hope this is carried out in the way that you have stated.

I have another question. I notice there is a difference in the estimates in the Blue Book from those presented in this book. I will refer, for example, to Item 30. We are still on Item 1 but this is just a specific example. I am wondering if this is the case all through the estimates or is this just a particular case?

Mr. L. V. McGurran (Director, Financial Services Directorate, Department of Public Works): This is the pamphlet that was issued as the probable new form of the estimates for the Department of Public Works. It is, of course, not officially accepted yet. The Treasury Board is going to consider the recommendations of the Public Accounts Committee, which has seen this proposal. You are quite right, sir, there are differences in this arrangement.

The idea here is that there are four programs under which the present items are included. The Administration Program, which is on page 6, is very much the same as the present administration item in the Department.

The next item is the Accommodation Services Program that is labelled as Item 5 in the pamphlet. That now consists of the present Items 5, 10 and 15: Item 5 is for the maintenance and operation of buildings, Item 10 is for the purchase of equipment, and Item 15 is for the construction of buildings. I should say that it was the recommendation of the Public Accounts Committee that one vote would not be sufficient in such an instance where a large amount of construction was going to be involved. There may have to be more than one vote there.

Next is the Harbours and Rivers Engineering Services Program. Those are marked on the pamphlet as Item 10 and those are the present Item 20, for the maintenance and operation of harbour works, for remedial works and so on, Item 25 for the acquisition of equipment and Item 30 for the construction of marine works.

The next program is Roads, Bridges and Other Engineering and Technical Services Program which is Item 15. That consists of the present Item 35 for the maintenance and

operation of roads and bridges, Item 40 for the construction, Item 50 for the construction of highways and the parks, Item 55 for the testing laboratories and Item 60 for the Canadian government exhibition service.

So those are the combinations of the items as they exist. As I say, the fact that they are shown as one item per program here may not be the final result.

Mr. Comeau: It is not really the organization I was concerned with, rather that in the Blue Book you are going to spend more money on different projects, I know in Nova Scotia, than you will in this book here.

Mr. Laing: We had better take the highest.

Mr. Comeau: The Blue Book then.

The Chairman: Your time is up, Mr. Comeau.

Mr. McGurran: Those items over \$250,000 are listed here. Mr. Comeau, I think the grand total is the same if you add them up.

Mr. Comeau: Thank you.

Mr. Gilbert: My first question to Mr. Laing is a very friendly question. In view of the past health problem that Mr. Aiken had and the problem that the Minister of Energy, Mines and Resources presently is having, is there any truth to the rumour that you are going to the Senate?

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Mr. Laing: How good is their accommodation over there? Is it a health resort?

The Chairman: I might say, Mr. Gilbert, that that item is not in the estimates.

Mr. Gilbert: I now have put the Minister in a good mood, Mr. Chairman. I notice in the estimates there is an increase in your 1969-70 budget of roughly \$29 million with a total expenditure of \$335,627,800 compared to last year's of \$306,025,800. When you made your statement in the House back in November of 1968 with regard to the estimates of 1967-68, you indicated that it was the view of the Department that you were going to take fire out of inflation and more especially in the construction industry. It was a direct contradiction to the statement of Mr. McIlraith in the previous year that he was going to put some fire into the construction industry. We now have an increase in your expenditures. What is your position? Are you putting the

fire in or are you putting it out with regard to the construction industry?

Mr. Laing: The remarks I have made, I think, have been addressed to the type of building that we propose to build. I have repeated again tonight that I think an efficient, good-looking, but an essentially utilitarian building is the type we should be building, instead of monuments. We have a situation in and around the Hill in Ottawa where the landscape, the history of the Hill and so on, requires a certain type of building and it is a building on which the cost per square foot is higher than what I call a utilitarian building. I confirmed the action taken by Mr. McIlraith in proceeding with the building at Tunney's Pasture, which is a utilitarian building and a very useful one. I referred to this again in the remarks that I have made tonight. This was the extent of my remarks.

I do not think I said I was going to take the steam out of the construction business, but rather to get better value for the money that we spend.

Mr. Gilbert: I think you were concerned about the government expenditures and the inflationary tendencies of government spending. I thought your remarks related to that.

Mr. Laing: Yes, that is correct.

Mr. Gilbert: That is why I wanted to know, with the increase in the expenditures for this year...

Mr. Laing: I think we are doing more things. My concern is to get as much value for those things as possible.

Mr. Gilbert: That leads to my second question, Mr. Laing, with regard to this modular co-ordination. I would like one of your staff to explain it and tell us whether it has been put into effect.

Mr. J. A. Langford (Assistant Deputy Minister, (Design) Department of Public Works): Whether it has been put into effect?

Mr. Gilbert: Yes, that is right.

Mr. Langford: The announcement stated it would come into effect on March 31. Basically, this is going to mean that we are going to ask all of our consultants to use the 4 inch module for design purposes. There has been quite an intensive program by the Department of Industry and ourselves across the country in getting certain acceptances and

warnings on what this means. It is not new. It has been tried elsewhere. Most of the European countries, particularly Denmark and Sweden, have been using this modular approach to construction for some time, very successfully. The idea is to improve the general building operation and to minimize the offsizes, as it were. The clay construction industry, for example, has been quite laudatory about this effort. They now will manufacture their bricks, their blocks and so on to a module based on 4 inches.

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Mr. Gilbert: Do you anticipate a saving as a result of this modular co-ordination or is it more of an emphasis on design?

Mr. Langford: We hope for a saving, but even without a saving, we forecast there will be increased productivity in the construction game. For example, all openings will be readily filled, there will not be as much labour in cutting and so on on the job. All windows, all door frames, all things will be of a modular dimension. We would hope, also, that large structural units, precast beams, steel beams and so on will conform to this dimension.

Mr. Gilbert: So you will be able to tell us in a year's time just what has happened in this experiment?

Mr. Langford: Yes.

Mr. Laing: Last fall you thought I was just using words. I did not get a chance to reply to you at that time, but I knew what I was talking about because that was the only part of my statement that I had memorized.

Mr. Gilbert: I think it has been well explained this evening and I am sure you would have done the same last fall, Mr. Laing.

Mr. Minister, my next question is with regard to the tendering procedures. You will recall that I asked you about tenders in the different categories. One of the categories was between \$15,000 and \$1 million and the next category was \$1 million and upwards. In a letter to me you stated that with regard to the category between \$15,000 and \$1 million, there were 696 contracts for which 3,623 tenders were received, giving an average of 5 tenders per contract, and in the category over \$1 million, there were 18 contracts, for which 128 tenders were received, for an average of 7 tenders per contract.

You will recall, Mr. Laing, that I was concerned about the practices of some companies who have fallen into single ownership by a group within a community and even though they operate under different names, basically they may be one and the same. I am now going to relate my remarks to contracts over \$1 million. You may have an average of 6 or 7 tenders with regard to these particular jobs, but these may have been submitted by one and the same firm or one and the same group of owners, who are operating under different names. I wonder what, if anything, your Department has done to investigate this particular problem?

Mr. Laing: I do not believe that practice could be very widespread because it costs a firm a considerable amount of money to make up a tender. They have to give evidence that they have done some work on this job and I cannot see a firm owning three subs putting in three tenders. I would be surprised if that happened because that would involved three times the cost. They have to substantiate to our people that they know what they are tendering on and that costs money.

Mr. Gilbert: Just to pursue this on that basis for the moment, Mr. Laing, what cross checks has your Department with regard to a tender over \$1 million?

Mr. Laing: Cross checks?

Mr. Gilbert: Yes. How does your Department know that a particular job is going to cost, say, \$1,200,000? Quite often six bids are submitted within the same price range.

Mr. Laing: Our people make estimates and I found in studying them that the tenders are surprisingly close. As a matter of fact, the estimates of my men lately seem to be a little higher than the tenders and this is what you could expect at a time when some people are sharpening their pencils to get business.

Mr. Gilbert: What criteria would your men use in determining the cost of a particular job?

• 2140

Mr. Williams: It depends basically on the cost of similar work that is currently being done, either by ourselves or others. This sets the market price, so to speak. In some jobs you cannot always do that. In some jobs we go to the laborious and expensive task of a quantity survey and a takeoff in just the same way and try to bid it in exactly the

same way as the contractor would. We would price it by what we buy or by what it would cost to do that element of work in order to develop a tender.

The price that we put on it before we go to tender is a governing price on us because that is the price at which the work was approved and we have to match that price. Treasury Board, as well as the Minister and the Deputy of the Department, knows that price and that is the determining price on whether we go ahead. Therefore, we try to bid it as closely as the contractor.

Mr. Gilbert: Do you have invitational bids on contracts over \$1 million?

Mr. Williams: No.

Mr. Gilbert: You do not. They are all public—

Mr. Williams: In some cases there are pre-qualified bids over \$1 million, but they are not invitational in that sense. They are public bid. They are advertised, received and opened publicly.

Mr. Gilbert: Mr. Chairman, you have noted that my 10 minutes are up. Is that right?

The Chairman: Yes.

Mr. Gilbert: I will come back to this at a later time. Could I be put on the second round?

The Chairman: Yes. Mr. Lind, you are next.

Mr. Lind: Mr. Chairman, there is a question that concerns me on this matter. We heard the other day in the House how certain professional fees on housing varied from Ontario to the Maritimes. I wonder, in the case of engineering, if there is a different schedule of fees set up by the professional architects and engineers in the Maritimes, similar to the lawyers, that is about three times greater than the schedule of professional fees for engineers and architects in Ontario. I wonder if you have run into anything like this where there is collusion by associations?

Mr. Comeau: I think you mean Newfoundland, not the Maritimes.

Mr. Lind: Well, is Newfoundland not in the Maritimes?

Mr. Laing: We have some relations with the Royal Architectural Institute of Canada, but I

will let Mr. Williams explain them. I think they are common across the country.

Mr. Williams: We work on a national scale.

Mr. Langford: Your question dealt with both engineering and architecture fees. In relation to the consultants that we hire in the architectural field, the Department of Public Works has a fee schedule for all of Canada which is agreed to by the component body. There is a variance, though, provincially. With the engineers, we have a variety of fees, generally based on the provincial tariff that is applicable. This, of course, is open to various assessments as to the kind of work and quite frequently the fee is negotiated within the range that is set by the professional association.

Mr. Lind: This would then have quite a bearing on the cost if this professional fee were 1 or 2 per cent higher, say, in the Maritimes than in Ontario. This would increase the cost, would it not, of a \$1 million project?

Mr. Langford: Yes, it would increase the total cost, if you included the fees.

Mr. Lind: You have to include the fees in the costs, do you not?

Mr. Langford: That is true. As I said, with the architectural work, we have a standard fee.

Mr. Lind: You have a set fee in the Department?

Mr. Langford: That is right. This is commensurate with the work that is done and it is spelled out in our contract.

Mr. Lind: Carrying this one step further, have you the same thing with engineering services?

Mr. Langford: No, we do not have a standard fee with the engineers.

• 2145

Mr. Lind: What about legal counsel?

Mr. Langford: We do not handle the legal work, that comes under the Department of Justice.

Mr. Lind: The Department of Justice?

Mr. Langford: Yes, they do all the legal work.

Mr. Lind: Does that come into the total cost of the over-all project?

Mr. Langford: The professional fees are part of the cost of the over-all project, yes.

Mr. Lind: Whether they are legal, whether they are for engineering or whether they are architectural?

Mr. Langford: That is correct, yes.

Mr. Lind: We were concerned about the great variation in fees between the different parts of Canada after we heard about this practice the other day from the housing committee. But let us go back to the area of marinas. In your Department, if there is a needed extension to a pier and a breakwater, do you call a tender for an ideal specified amount, then go back to the local municipality or the marina operator and say, "Here, you have to spend this amount to get so much breakwater and so much pier", or do you do it in the reverse fashion? Do you have the operator say how much money he will spend on the marina and the shore facilities and then you say "We will spend a like amount on the breakwater and on the pier"? What procedure do you use?

Mr. Laing: You are asking which is the bow and which is the stern.

Mr. Lind: Well, I would like to know which way you go at it.

Mr. Laing: Mr. Williams will answer.

Mr. Williams: Sir, the request originates with the municipality or the private developer who wishes to develop the marina. He usually begins by saying that he wants double breakwaters of a certain size and certain dimensions and he wants dredging to 27 feet in case a big boat comes. This is the first approach. At that point we do a survey of where he wishes to locate. He gives us his ideas of what he intends to develop, the number of floats, the gas station, the sewer and water plans he has and everything else and what he is proposing to do, so we can get an idea of the capacity and the size. Once we have that information we can see what dredging is necessary to service the kind of craft in the area.

First of all, with so many people making requests we have to be selective and exert some priorities. So we look at the traffic demand and concerning this we deal with the local people, the Department of Industry and FRED. These development programs also are involved in this kind of an assessment.

We determine what kind of craft so we can determine to what depth the dredging, in our view, is required and we estimate the cost of dredging. We also decide to what degree a breakwater is required. In some cases operators will ask for breakwaters, if we are going to pay for it, whether they are required or not. More is always better but not always necessary. We come up with a plan that we think fits the service that is required at that point. We cost it and then see if his program matches it. That is the approach.

Mr. Lind: What if the Fisheries Department is involved with a fishing fleet in the same harbour as this marina would be located in although perhaps, farther up the river. Is any consideration given to supplemental help for the fishing fleet from the Department of Fisheries?

• 2150

Mr. Williams: The provision of shore facilities for public fishing fleets, that is, apart from private firms, is a responsibility of the Department of Fisheries which we carry out on their behalf. So that part of the facility is met by us without the participation of the marine operator.

In some cases the increased use of pleasure craft creates situations where the fishermen are not in a position to operate. They go in and out and perhaps when they try to come back in they might find it all jammed up with pleasure craft. In this case, if someone will develop a marina off to one side which will ease the situation we are interested in that kind of development. The operator, however, is not required to pay for the dredging that services the fishing fleet. That cost is not written off against his investment. It is just the extra that is done to service his pleasure craft facilities.

Mr. Lind: Then there are joint efforts...

Mr. Williams: That is correct.

Mr. Lind:...where you combine the marina and the fishing fleet at the same time?

Mr. Williams: That is correct.

Mr. Lind: Thank you, Mr. Chairman.

Mr. Williams: You say "joint", adjacent is a better description because the mixing of them gets very difficult.

Mr. Hymmen: Mr. Laing, I notice on the first page of your brief you mention one of the

features recommended by the Glassco Commission; reorganization and de-centralization. If I might refer to the Glassco Report, I would like to ask another question. The Glassco Report recommended that the Department of Public Works be made responsible for the planning and supervision of all construction required by civil departments and agencies in the employment of all professional technical and supporting staffs needed for such purposes. Is there any overlapping of engineering and architectural personnel in other departments which might cut down the efficiency or add to the cost of capital undertakings?

Mr. Laing: That is a tough one. This matter, which relates directly to the Glassco Commission Report is still under study. There have been papers prepared. It has been discussed between the departments and I think I can tell you it is being discussed at Treasury Board.

Mr. Hymmen: I have another question following along the line of Mr. Gilbert's questioning. One of the advantages of the new type of estimates is that we get a projection, the total estimated cost less what has been expended, what is allocated for this year and the final projection. I believe there is \$88 million this year, including capital construction in Ottawa and almost half of which, I would say, is for the other provinces but there is still an over-all projection of a further \$112 million in order to complete these projects.

Now I think you mentioned Mr. Laing, and we all know, that government departments are increasing and some occupy substandard accommodations; for example, National Defence Headquarters, the Department of Industry, and others. However, there still are some adequate buildings in the City of Ottawa which are presently under rental or lease by the government. I realize it would be wholly desirable to have one building as an entity for each federal department when we can afford it, but I am also aware that we are in an era of constitutional discussions and some of our federal departments might increase in importance, some of them might decrease in importance and some might be eliminated altogether. My general question is: what general criteria, aside from, shall we say, the squeaky wheel, is used to decide whether departmental operations will be retained in rental premises or whether a brand new building will be constructed?

• 2155

Mr. Laing: Well we endeavoured in the remarks we made here to speak about mobility, because the most recent adjustment and rearrangement of departments, I think—most of the members here I am sure would agree with me—will be the last rearrangement to be made. This leads us again, therefore, to think more in terms of building a standard type of utilitarian building that can be used by more than one department. Against that we have certain departments for whom, I think, particular types of buildings will have to be built. Also, any buildings constructed near the Hill will have to adhere to the general landscaping and the type of building that is already on the Hill.

Your first general comment had to do with de-centralization, and I want to claim for this department that I am sure we have endeavoured to put the ability for decision-making on the ground; in other words, bringing government to the locality in which administration is of importance to the people. We have done it. We have, I think, taken the lead of all the departments. Because I come from an area in Canada probably furthest away from Ottawa, I would like to see more de-centralization of government. I think it is important to us. I think that a great deal more decision-making should be on the ground. In my own province—probably some of you have had similar experiences—I have found civil servants in the various areas saying, "I have to write to head office". Now I do not want that kind of language used in any part of Canada. I do not think this is right at all. I think the more decision-making that can be taken at the various areas the better it is for the country as a whole. I think our Department has taken a lead in that respect.

Mr. Hymmen: Mr. Chairman, I have one final question, and it may be elementary, however, in the case of the construction of a public building, say a post office where two departments have responsibility, which department has the final say? Is it the Postmaster General's department?

Mr. Laing: Would you repeat that question?

Mr. Hymmen: When the Department of Public Works is authorized by the Post Office Department to construct a post office is the final decision on whether or not to proceed with the building the responsibility of the Post Office Department or your Department?

Mr. Lalonde: When you are talking about this type of building you have to visualize that it usually is centered around the post office and there may be other requirements attached to the post office. The main requirement, however, in most of these cases is still post office requirement. If we do not go ahead with building a post office, then we may have to find space elsewhere for the needs of other departments.

Mr. Laing: Was your a specific question in respect to a post office standing by itself?

Mr. Hymmen: Yes.

Mr. Laing: What is the answer there?

Mr. Williams: It is their requirement and they specify what they want in terms of the requirement to meet their service and they indicate its priority in relation to other post offices they have asked us to build.

Mr. Hymmen: That is my question, they establish the priority?

Mr. Williams: That is correct, yes.

The Chairman: Gentlemen, on the first round I still have Mr. Roy, and Mr. Ritchie on the second round I have listed Mr. Aiken, Mr. Gilbert, and Mr. Orange. I am about to adjourn the meeting for today but I would like to know first of all whether it is the desire of the Committee to have the Minister back at the next Committee meeting?

Mr. Gilbert: I think everybody should have one go at him.

The Chairman: Well our next Committee meeting as far as we know now will be on Tuesday of next week. It will be at the call of the Chair because the Committee that allocates time for these meetings will be meeting tomorrow and we will not know until then what time we will be meeting next Tuesday. Would you be able to be present next Tuesday, Mr. Laing?

Mr. Laing: Yes.

The Chairman: Yes, Mr. Comeau?

Mr. Comeau: If the Minister cannot be present next Tuesday, perhaps we could go on to the Dominion Coal Board or something like that.

• 2200

Mr. Laing: Next Tuesday afternoon or evening will be all right.

The Chairman: We will try to have our Clerk arrange the meeting for the afternoon or evening, if at all possible.

Mr. Comeau: Mr. Chairman, I still have to object because next Tuesday, you know, the great party of this country is having its annual meeting and Tuesday evening would be a bad night for us.

Mr. Laing: A bad night for everybody.

Mr. Langlois: Do not overdo it, it will not be that bad.

Mr. Comeau: A bad night for us to be here.

The Chairman: I can assure you all these gigantic decisions will be taken very seriously and in all fairness and as your Chairman, I am not prejudiced, but another great party of this country will try to work out the best possible means to accommodate you.

The meeting is adjourned.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 13

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TUESDAY, MARCH 11, 1969

Respecting

Main Estimates (1969-70) of the Department of Public Works

APPEARING:

The Honourable Arthur Laing, Minister of Public Works

WITNESSES:

(See Minutes of Proceedings)

THE QUEEN'S PRINTER, OTTAWA, 1969

STANDING COMMITTEE ON NATIONAL RESOURCES AND
PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen
and Messrs.

Aiken,
⁴Badanai,
Beaudoin,
³Breau,
¹Chappell,
Code,
Comeau,

²Deakon,
Gilbert,
⁶Harding,
⁵Hogarth,
Langlois,
Lind,

Moores (*Bonavista-Trini-
ty-Conception*),
Paproski,
Ritchie,
Roy (*Timmins*),
Sulatycky—20.

(Quorum 11)

J. H. Bennett,
Clerk of the Committee.

Pursuant to S.O. 65(4) (b)

¹ Replaced Mr. Cullen March 10, 1969.

² Replaced Mr. Gibson March 10, 1969.

³ Replaced Mr. Mahoney March 10, 1969.

⁴ Replaced Mr. Orange March 10, 1969.

⁵ Replaced Mr. Crossman March 11, 1969.

⁶ Replaced Mr. Skoberg March 11, 1969.

MINUTES OF PROCEEDINGS

[Text]

TUESDAY, March 11, 1969.
(13)

The Standing Committee on National Resources and Public Works met this day at 3:38 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Aiken, Badanai, Beaudoin, Breau, Chappell, Code, Deakon, Gilbert, Harding, Hogarth, Hopkins, Hymmen, Langlois, Lind, Roy, Sulatycky (16).

Also present: The Honourable Arthur Laing, Minister of Public Works and Mr. MacDonald (*Egmont*).

Witnesses: From the Department of Public Works: Messrs. L. Lalonde, Deputy Minister; G. B. Williams, Senior Assistant Deputy Minister; and J. A. Langford, Assistant Deputy Minister (Design).

The Chairman called Item 1—General Administration of the Estimates 1969-70—Department of Public Works and Mr. Lalonde, Deputy Minister of Public Works read answers to questions asked by Mr. Orange and Mr. Paproski at the meeting of March 4, 1969. (*See Evidence*).

The Committee resumed their examination of the Honourable Arthur Laing and his associates.

Mr. MacDonald (*Egmont*) questioned the Minister of Public Works respecting the Prince Edward Island Causeway.

After debate thereon it was agreed, unanimously,—that the above matter be referred to the Subcommittee on Agenda and Procedure.

At 5:30 p.m. questioning continuing, the Committee adjourned to Thursday, March 13, 1969.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, March 11, 1969.

expected that at least 75% of this will be gone by the summer of 1969.

On the Yukon section of the highway a 2.5 mile section at Watson Lake and short sections in the Whitehorse area were treated with an asphalt emulsion product designated as SS-1. The cost was approximately \$3,000 per mile and it is anticipated that all these sections will have to be redone in 1969.

Another 15-mile section on the northern portion of the highway, Mile 1146 to 1161 was treated with another type of asphalt emulsion designated as AE200-M. The cost of this was again \$3,000 per mile with life expectancy less than one year.

1967 Program

During 1967 a number of sections were also dust proofed, one particular method costing \$8,300 per mile. It is expected this treatment will last approximately 3 years. In addition, a road oil which cost only \$1,350 per mile was used on a short section, but the life expectancy was only three months.

● 1540

Mr. L. Lalonde (Deputy Minister, Department of Public Works): There were two other questions asked, Mr. Chairman. One was about the percentage of bilingual employees in the Department. Recently we made a survey of the situation and issued a questionnaire to all employees. The statistics resulting from that survey show that out of 8,554 employees, 2,263 reported having some bilingual ability. I do not have and it is impossible to get a clear statistic on the degree of bilingualism each of those employees may have. Some are 100 per cent bilingual and you can take it all the way down to perhaps 10 per cent. In other words, some of them can read, write and speak both languages and some of them can only read both languages. These figures are being used to prepare our long-range program to give courses to those who have some degree of bilingualism and eventually to those who do not have any.

● 1537

The Chairman: Gentlemen, I see a quorum so I will call the meeting to order. Once again I will call Item 1 under General Administration of the 1969-70 estimates of Public Works on page 306 of the Blue Book. The members may resume their examination of the Honourable Arthur Laing, Minister of Public Works, and his associates. I have the names of two people who were still on the first round of questioning after the last meeting but before we start I will call on Mr. Lalonde or Mr. Laing for an explanation of, I believe, three questions that were asked at the last meeting. Mr. Laing?

Hon. Arthur Laing (Minister of Public Works): I will reply only because Mr. Lalonde has handed me a prepared statement in answer to some questions asked by Mr. Orange, I think.

My first answer deals with dust control on the Alaska Highway. It is undertaken for two purposes. First, to give immediate relief through built-up areas and secondly, to assess different products and methods for providing dust control.

The cost per mile figures given below are dependent on the type of product used and the aggregate required to prepare a good travel surface for the public. The cost has little relation to the particular section concerned.

Dust Control—Summer of 1968

On the British Columbia section of the Alaska Highway, approximately 40 miles were dust proofed, including the Fort Nelson airport road, sections both immediately North and South of Fort Nelson, a 7-mile section of the Muncho Lake area and about 6.5 miles of frontage roads to protect motels, etc. The dust proof agent used on these sections was "Special Primer" an asphalt product manufactured by Imperial Oil. The all inclusive cost for this work was approximately \$2,500 per mile. It is

The third question that was asked was to produce a list of consultants for all the projects that are listed in the Blue Book. We have been working on this and I will table it on Thursday, Mr. Chairman.

Mr. Chairman: Thank you, Mr. Lalonde.

Now, continuing on the first round of questioning Mr. Roy will start off today, followed by Mr. Ritchie.

Mr. Roy (Timmins): Mr. Chairman. One of the members last week was not complaining, he was complimenting the Minister on the large amount of work that was being performed by Public Works in his riding. My questions about particular projects will be short because there is no large amount of work in my riding. We have one simple little project going on, or supposedly planned to go on, dealing with the Ansonville Post Office. The people in Ansonville have made representation to me to have door-to-door postal delivery in the area. I wonder if in these plans or if in the planning of this post office this has been given consideration, since I understand they are pretty close to the minimum number of drops to get the postal delivery?

Mr. Laing: It has been suggested that you might give us notice on that question. We will provide an answer for you on Thursday. The work that we do is always initially requested by the Post Office Department. If they have a requirement, they give us a idea of what the requirement is and, I think I am correct in saying, our people after inspection determine the best way we can provide that requirement. We will have some further talks with the Post Office Department and let you know on Thursday.

Mr. Roy (Timmins): Thank you. I would not like to see the post office go up and then find that some changes had to be made because of postal delivery. I will move to another riding.

Mr. Laing: Ansonville?

Mr. Roy: Ansonville, Ontario. Since there are so few public works in my riding, Mr. Chairman, I will have to go to another riding.

I notice an item for the Haileybury wharf and breakwater in the 1970 estimates in the amount of \$53,000 and in the 1968 estimates there was a similar item in the amount of \$105,000 making a total of \$158,000.

I wonder if a study of the use of this wharf or these facilities was made before this expenditure was approved because I do not think there is much commercial use made of that wharf and not too much tourism.

● 1545

Mr. Laing: I might say, Mr. Roy, that we have had some objections raised along the lines that you are now inferentially raising that this was not justified. I want to tell you that in this particular instance we are buying ourselves out of a responsibility—the sum is not \$158,000, it is much less than that. I think it is about \$70,000 or \$80,000 in actuality—at the end of which time the town will take it over.

Mr. Roy (Timmins): When will the town take it over, when it has been repaired?

Mr. Laing: As soon as we finish spending \$60,000.

Mr. Roy (Timmins): Thank you, although I think the town might have done better by just getting an outright cheque for the use they are going to get out of that wharf. However, with regard to your design staff, I wonder if you have any way of measuring their units of work and whether or not they are providing adequate service or do you just give them a project and let them work on it until they have completed it?

Mr. Laing: The way you asked that question it is probably unfair to ask Mr. Langford to answer it, but I guess I will have to.

Mr. J. A. Langford (Assistant Deputy Minister (Design) Department of Public Works): Do you mean, do we have measurements to judge whether or not they are accomplishing a task?

Mr. Roy (Timmins): Right.

Mr. Langford: They generally operate under the same conditions that a normal design office would. You have to zero in on what the job is. In some instances we get design projects that probably are not too attractive to an outside consultant, particularly if we are looking at remote areas and so on, where travel and certain conditions are involved, but generally they have a target, a schedule and a review system much like we put our hired consultants through. I said earlier—I think at the last meeting—that we have done an approximation of the workload

and I would say that about 80 per cent of our design talent is contracted out to private consultants. Does that answer your question? Do you have a specific example that I could perhaps...

Mr. Roy (Timmins): No, I do not. I just wondered if you had a policy in your Department which allowed you to measure the performance of your staff.

Mr. Langford: Yes, definitely. We have target dates; we have a schedule; we have reviews; we have exactly the same procedures that we utilize with an outside consultant.

Mr. Roy (Timmins): When you are doing work for other clients or other departments, who determines the space required? Is it the other department or your Department?

Mr. Langford: We have agreed generally on standards basically dependent on the task that has to be performed. In relation to post offices for example, we have an equation set up by the Post Office Department to demand what kind of facility they need in a particular area. We have standards that go from 600 square foot buildings to 800, 1,000, 1,200 to 1,600, in this ratio, and it has a direct relationship to the amount of business and the number of employees that are involved in that particular building.

Mr. Roy (Timmins): So there are units of measurement that you use to establish these areas?

Mr. Langford: That is correct.

Mr. Roy (Timmins): Who determines the type of accommodation or quality of accommodation they receive?

Mr. Langford: This is basically our responsibility. It is a design factor.

Mr. Roy (Timmins): I understood the Treasury Board had some sort of quality scale according to departments, so that certain departments get better quality buildings than others?

Mr. Langford: This is now in progress and the Department of Public Works plays a very big part in this Treasury Board function of establishing basic standards and permissive standards. If a facility demands a particular function, such as a laboratory, then the Treasury Board makes a judgment on how much above a permissive standard will be allowed.

Mr. Lalonde: May I point out, Mr. Roy, that there are two very distinct factors involved here. One is the setting of the client's requirement which is done by the Department jointly with Treasury Board on the basis of a program which is eventually approved by Treasury Board. Once the client department's program is approved, they come to us and they say, "What will it take to provide us with these requirements"? The requirements vary from very special requirements for certain agencies to normal office accommodation. The Treasury Board, jointly with us, are now setting standards for all office accommodation. Eventually we hope to have standards for everything, but there are areas now of special requirements where it is not easily possible to set a standard because it may be appropriate to only one department and occurs only once in a while.

The Chairman: Mr. Roy, your time is up. Would you like to wind it up with one more question?

Mr. Roy (Timmins): Oh, no, I have a lot more.

The Chairman: I will put you on the second round then. Mr. Ritchie was next on the list, but as he is not here I will call on Mr. MacDonald.

Mr. MacDonald (Egmont): Mr. Chairman, perhaps it is no surprise, but I would like to ask quite a number of questions with regard to the Prince Edward Island crossing—the Northumberland Strait causeway project—and perhaps before entering into these questions because we are on a general discussion, I understand, of Public Works estimates, I should ask whether there will be provision later on for, perhaps, a series of meetings on this particular subject or whether you would rather I engage in the questions now? I am prepared to do either, whatever would satisfy you, sir, and the Minister and his representatives from the Department.

The Chairman: Mr. MacDonald, having heard these questions raised in the House I expected this subject would be brought up. I would like to suggest to the Committee that possibly this could be referred to the Steering Committee for discussion because, as you can appreciate, there will be a considerable amount of preparation required or other per-

sonnel involved and so on. I wonder if you would agree to hand it over to the Steering Committee.

Mr. MacDonald (Egmont): If you would give me an undertaking, sir, that this would be the case, I would be quite happy to do so. I realize that to break up now what is a general discussion with a specific discussion would not be in the best interests of the Committee. There are other members who, I am sure, are also interested and, as you know, this is a busy week for those who are Conservatives in terms of the convention and some others are even out of the country. I think to be fair to everyone it would be wise to have it at a scheduled time, but, first of all, I would like to have that assurance.

Mr. Laing: We would prefer to deal with the rest of the estimates and then set aside a day for this discussion. Mr. Lalonde has pointed out to me that this could very well involve the appearance of ministers other than myself. I think if the matter were discussed fully at your Steering Committee first, they might make preparations that would save time when we come here.

Mr. MacDonald (Egmont): I agree.

The Chairman: If the Committee is in agreement I will call a Steering Committee meeting on this and we will set aside a period for the discussion of this matter.

Mr. MacDonald (Egmont): I think the discussion will take longer than the one day the Minister suggested because the question has so many related factors and it covers a period of some 10 years. I think it would take more than a full day's business even to get at all the various facts and information related to the question, but with that proviso I will be very happy to pass for now.

The Chairman: Does the Committee agree then that we should stand this subject and let the Steering Committee set up a special period of discussion for it?

Some hon. Members: Agreed.

Mr. MacDonald (Egmont): Could I mention just one other thing? I am still waiting for some documents that we were assured last week would be made available to us shortly. I

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would hope this would be the case so we can have all the relevant information before us

when the discussions in Committee take place. I think the Minister is agreeable as I saw him nodding his head.

Mr. Laing: May I ask if the Stanford material has been tabled yet?

Mr. MacDonald (Egmont): Not yet, that is one document in particular we would like to have.

The Chairman: You accepted it along with the rest. It was agreed that it would be part of—

Mr. MacDonald: Yes, I know. I think, actually, the Minister of Transport was the one to table it, but it seems to have fallen between the two departments somewhere.

Mr. Laing: It is agreeable then that we will proceed with the other estimates?

Mr. MacDonald (Egmont): Yes, and we will come back to it later as arranged.

The Chairman: We will proceed with the rest of the estimates and leave Item 1 open for that purpose.

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Mr. MacDonald (Egmont): That is fine, thank you.

Mr. Breau: Mr. Laing, who determines the need for either capital expenditures or maintenance that your Department undertakes concerning the Department of Fisheries? What kind of co-operation do you have in consultation with the Department of Fisheries, say, in determining if a wharf should be built in a certain area or if there is a big maintenance job to be done?

Mr. G. B. Williams (Senior Assistant Deputy Minister, Department of Public Works): There is an interdepartmental committee that operates between ourselves, the Department of Transport and the Department of Fisheries, who are practically the constant members. In addition to this there are added to the committee, as is appropriate, members from the Atlantic Development Board, the Fisheries Research Board and in some cases the Department of Industry. The projects which may be raised by anyone of these parties are screened by this committee and a Treasury Board representative sits in with the committee. Capital works are dealt with on that basis.

With regard to the question of maintenance, the initiation for most of the maintenance rests with our district officers in maintaining the facilities. However, in specific cases the Department of Fisheries, if there is an area where they feel the standard is not being maintained or where a volume of fishing is expected that would be a particular strain on the facility, will deal directly with our regional and district people and ask for special maintenance on it.

Mr. Breau: But within the regions themselves there are just your Departmental engineers who look after the wharves?

Mr. Williams: That is right.

Mr. Breau: So you depend on them to report the need for—

Mr. Williams: That is correct.

Mr. Laing: You are primarily interested in the justification or the denial of justification.

Mr. Breau: Yes, and the setting of priorities for major repairs, major extensions and things like that.

Mr. Williams: As soon as there are major repairs or major extensions, they are treated in the sense of capital works again and are reviewed in this interdepartmental committee on priority.

Mr. Breau: They are reviewed by the interdepartmental committee?

Mr. Williams: That is correct.

Mr. Breau: Has any consideration been given to allowing the Department of Fisheries to have more direct jurisdiction on the decisions for the construction of wharves and other capital expenditures? Has this been studied?

Mr. Williams: I do not know of any consideration to give them more than they have now because as they attempt to develop their programs and then as their programs develop—they may go into a program of participation in landing stages and this sort of thing that go along with the wharves; the provision of sheds or something of this nature or assistance in development of a certain type of fishing—they automatically bring them to our attention in relation to specific projects in whichever district they are interested at the moment, so they make their input directly to

us in any case. The reason they come to us is that the funding is in our vote at the present time so we can make the provision.

Secondly, in any case, if the funds were in their estimates, they would come to us to provide them with the amount of money to do the survey and the estimate and also to advise them the amount of money involved in the project so they can consider the priority and the economic viability of it. In that way they do make a full input into what is required.

Mr. Laing: The statistics on the volume of fish handled at any point to justify or deny a project are obtained from the Department of Fisheries only.

Mr. Breau: Some people have requested—I guess mostly fishermen—that your Department institute a team of maintenance men in some areas, because there are many small maintenance jobs that are required on the wharves which, sometimes, could help allevi-

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ate some problems. I do not think that your Department has been too responsive to this suggestion. I do not think you want this sort of an arrangement. At present the need for the repair has to be reported which takes time, then an engineer has to go on the spot to investigate and then a tender has to be called. Could you elaborate on your reasons for not preferring maintenance crews—not necessarily a crew but perhaps one man or two for an area or something, not only to make the repairs but to examine and assess whether the wharfs are in good condition or not?

Mr. Williams: In our organization, we have a system of territorial engineers within a larger area which covers several territorial engineers. It is their function to review the marine facilities in their own particular territories and then in the area. The necessity of having the work consolidated is that, as everyone else does, they work to a budget. Also every territorial engineer makes more requests for maintenance than we can afford to fund, so at each level they have to set some budget limit and some priorities. When the territorial man sets the priorities our concern is that if we leave the priorities entirely to him they may not fit into the over-all priorities that the Department of Fisheries might have in mind. If in their view a certain wharf

or a certain facility were phasing out, the idea is not to have him expend money on continued maintenance. He should be looking at whether or not it can be run down to the point of abandonment. So for this reason there has to be a consolidation of all the requests and an examination in setting up priorities with both maintenance as well as new construction.

In reply to the question about having a repair crew go around to do these this is done to some degree. At the last session we reported on minor works of which we do a substantial amount. When he undertakes these works he does them by invitation tender again, because he is in a budgeting position and he has to set a limit on what is going to be spent. He cannot just allow people to go to work and spend what they think should be spent.

Mr. Laing: Mr. Breau, I think a good example is the damage done by the storms prior to the end of the year. I have received a number of letters congratulating the Department for repairing the damage quickly. In the case of others, we did write letters saying that the repairs could not be done until the winter season was over but I got the general impression that the repair work was done pretty quickly. That may not be your experience but that was the impression I got.

Mr. Breau: In some areas, yes. That is all.

The Chairman: Thank you, Mr. Breau. I have Mr. Harding left on the first round, then if there are no others in the first round, we will start with Mr. Aiken on the second round. So I will call Mr. Harding first.

Mr. Harding: Mr. Chairman, I have one or two local problems I would like to raise. However, before I get into them I think there is another topic that the Committee might like to discuss in some detail, this is the Roberts Bank affair in British Columbia. Again, it might involve other than just the Minister of Public Works. I was wondering perhaps—

Mr. Laing: We are not building Roberts Bank.

Mr. Harding: You have some involvement in it, though?

Mr. Laing: No.

Mr. Harding: Nothing at all?

Mr. Laing: Transport only.

Mr. Harding: Just transport. I was going to suggest that if it came under this category we could perhaps discuss it a little later on.

There is one problem, Mr. Chairman, I should like to draw to the attention of the Minister and his Department, in connection with a boat basin at Ryker's, which is near Creston. The Department has had some cor-

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respondence with the Town Council in Creston and with other interested parties. It seems to me this is something that should be looked into and action taken on at a very early date. I raise the matter at this time, Mr. Chairman, because high water is coming. Already a considerable amount of work has been done on this boat basin by the district concerned. There has been very exceptionally heavy snow in the southern part of British Columbia this year and a great deal of damage could result if the water came up higher than normal.

I would like to point out that this is almost a joint operation between the Americans and Canadians. They have a small international airport, if you like to put it that way. The Americans have spent a great deal of money on this airport. The Canadians, through the Department of Transport, have co-operated with a small grant. They park the airplanes on the Canadian side and the landing strip is on the American side and the Customs office is right there. Everybody is co-operating on this project. The State of Idaho and several of the little towns around are all in on it.

Here we find one department of government contributing financially; for example, the DOT put up \$25,000 for parking on the Canadian side. The State of Idaho excavated the boat basin or the section that I am suggesting something be done about, and they have used the material for building up their airport. A very small expenditure, they estimate around \$10,000, would put this boat basin in workable shape. A great deal of the work has already been done. If we had to start fresh now it would be quite a costly proposition. I understand the State of Idaho has volunteered docks and a number of other things which they can use within this basin.

I think when the Department examined it they felt there was not sufficient traffic to warrant any expenditure. Surely we cannot

start estimating traffic or taking the traffic pattern of years gone by when something like this would vastly increase the tourist potential for this area. I want to point out to the Committee that this is one of the districts we are trying to bring under the incentive area program. It is an area where there is a need for something based along the lines of tourism.

Mr. Laing: What side of the boundary is the basin on?

Mr. Harding: The basin is on the Canadian side. I understand that Mr. Byrne, the former member—he was not the former member for Kootenay West but the little section of Kootenay West that we took over from Kootenay East is this Creston area—was interested in this and had written to the Department and urged the Department to take action on it. This was just about a year ago prior to the election.

It seems to me that a project of this kind is something the Department really cannot afford to overlook. Just to give you a little background, there are a host of new tourist developments along Kootenay Lake including one at Crawford Bay, where the Kokanee Springs have invested hundreds of thousands of dollars—they will have an investment of several million—to try and attract tourists to this area. A lot of people will be landing at the airport and there will be boats coming up the Kootenay River when the Libby Dam is completed. Also, the boat basin is very necessary here, because of the Customs port. This is something that I think the Department has

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overlooked, Americans coming in by boat have to go through Customs just the same as anyone else. This is why you cannot locate this boat basin a few miles away because you just do not have a port.

Mr. Laing: Is it a marina project?

Mr. Harding: It is a marina project, yes.

Mr. Laing: Why will it not qualify under our marina program? Have you been told that it will not qualify under the marina program?

Mr. Harding: I understand that initially, when they made their application, they felt it would cost some \$44,000. The Department indicated to the Council that \$15,000 was the limit on this type of expenditure although I do not know whether this is factual or not.

However, because of the work that has already been done and the donation of docks and so on which are coming from elsewhere, they cut it down to around this \$10,000 mark. I was wondering if anyone in the Department had any information on this or would you like to look the information up and bring it back to another meeting?

Mr. Laing: Do you mind if we handle it that way, if we get the information for Thursday?

Mr. Harding: That will be quite all right, yes.

Now there are several other things I think I have drawn to the attention of the Minister. I am not going to repeat them as I have brought them up in the House.

Again, in connection with Kootenay Lake there has been quite a bit of storm damage. I understand, to a number of the launching rafts around Boswell. Again this is something, Mr. Chairman, I would like some information on at the next meeting. What plans has the Department for restoring these launching ramps so tourists coming into this area will be able to utilize them for the coming tourist season which will start fairly soon? Now, apart from this, there are, of course, other public works projects in my area and I am not going to spend the entire time on it.

Mr. Laing: Have you any comment on the agreement that we have with the Hydro in respect of flooding the lake?

Mr. Harding: Yes. This is something I wanted to raise.

Mr. Laing: The building of new wharfs and so on.

Mr. Harding: I understand that when the Arrow Dam was built, if any of the wharfs had to be abandoned, and practically every one of them had to go, that at least the communities understood these wharfs would be replaced. Apparently there is an agreement with the Department of Public Works—you can correct me if I am mistaken in this—that the British Columbia Hydro Power Authority is to look after this aspect of replacement until 1972 or 1973, I am not just sure of the date but for the next three or four years.

A number of communities, quite a number of them along the Arrow Lakes, Edgewood, Fauquier and Burton, all had wharfs, all have been destroyed, if you like, or had to be

pulled down because of this project and all are very interested in getting some type of access to their community. I think they are having a bit of difficulty with Hydro.

It is easy enough for the federal government and a provincial Crown agency to make an agreement on paper but the communities have to show need. Today I look upon need as people with boats having some place to tie up or to launch from. I would urge the Department to have a very close look particularly at these three places which I have mentioned, the Edgewood, Fauquier and Burton areas and, if necessary, make representations to Hydro that they go to the communities and discuss the possibility of replacing some type of a wharf in these areas.

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Mr. Laing: I understood this was the spirit of the agreement, that they were forcing people to move to higher ground and the people were entitled to a comparable standard of service at the higher level and this was to be replaced by Hydro. Was not that the agreement?

Mr. Williams: There is a question of need because in some places, with the flooding, the communities and the transportation pattern and other things that originally serviced the area are now destroyed or completely changed. So the fact there was a wharf at a location does not automatically require one there after the flood. Each was to be examined on its merit.

Mr. Harding: I think my time is up although I had a question or two more on this. Perhaps I could ask them on the second round, Mr. Chairman.

The Chairman: I would not object if no one else does if a couple of more questions would finish the subject. Is the Committee in agreement to let Mr. Harding finish?

Mr. Roy (Timmins): Mr. Chairman, I was just cut off. Either we get cut off or we do not, one or the other.

The Chairman: All right. We will have to put Mr. Harding on the second round, then.

Mr. Laing: Before we finish this could we bring the contract on Thursday too? Then we will have a look at that.

Mr. Harding: That is fine.

The Chairman: All right. Mr. Aiken you have dropped down one because Mr. Badanai wants to ask some questions on the first round I believe.

Mr. Badanai: Mr. Chairman, I only have a brief question to direct to the Minister. After several representations over the past year and a half the government agreed to dredge the Mission River at Fort William, to extend the seaway depth of 27 feet. Now in examining projects covered by the estimates I find the dredging of the Mission River is not covered, at least it does not appear. I wonder whether this job is covered by a special submission to the Treasury Board or by an Order in Council?

Mr. Laing: It better be in there, we have let a contract.

Mr. Badanai: It does not appear in the book.

Mr. Williams: It is included in the general item. "Lakehead—Harbour repairs and improvements—To complete."

Mr. Badanai: On what page?

Mr. Williams: On page 327, \$655,000.

Mr. Laing: Do you want it or do you not want it?

Mr. Badanai: Of course we want it. I was afraid for a moment it was being omitted because I did not see it in the book.

Mr. Laing: I just want to clear that up.

Mr. Badanai: On page 327?

Mr. Laing: I might explain to the other members that this dredging on the Mission River involves the supply of some needed depth for ships of a certain size involving a shipment of, I think, between 5 million and 6 million tons per year of iron and iron pellets. It is an assistance to a very large industry that is developing there.

Mr. Badanai: That is covered under "Lakehead—Harbour repairs and improvements—To complete"?

Mr. Lalonde: That is correct.

The Chairman: Mr. Langlois.

Mr. Langlois: Mr. Chairman, as we are still on the first round and there were no supplementaries—well mine should have been a

supplementary to Mr. Gilbert's the other day—let us say this is my first question for today.

The other day Mr. Gilbert, during his questioning said that he had obtained from the Department a list of contracts below \$1 million and a list of contracts over \$1 million

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with the number of bidders. After calculating the number of contracts over \$1 million and the number of bidders he came to the average of seven bidders per contract of \$1 million and over. He was worried about the fact that according to him lots of contractors are more or less merging together and that one of these days—maybe he thinks it has already been done—on some contracts all the bidders will be the same people under different name.

I know Mr. Gilbert is a very prominent lawyer in the Toronto area but apparently he is not too familiar with the building industry, which I was part of for about 10 years. I would like to reassure Mr. Gilbert that if he thinks there is no competition in the building industry he is just dreaming.

Mr. Gilbert: Mr. Chairman, on a point of order, is this a conversation between Mr. Langlois and myself or is he questioning the Minister?

Mr. Laing: It falls into the area of corrections.

Mr. Gilbert: I will be very happy to reply.

Mr. Langlois: Mr. Chairman, I was just trying to get the opinions of the Minister and the Deputies to find out if such a thing can happen. If there is a possibility that seven bidders on a contract are the same outfit under different names then I think the Government of Canada should really start worrying. As far as I know such is not the case. Mr. Gilbert said that perhaps two or three were the same company or the same capital.

I do not know why they should bid on the same contract and spend three times the money as only one of them bidding. It is only the lowest one that is going to get the bid and if there are three different names but the same outfit they all know the prices they are going to put in. So I think that would be a loss of three times making the bid, three times getting the insurance, the bid bonds and this and that. I do not think it is possible. Anyway, there would be three or four compa-

nies not in the collusion, if you may call it that, and it would destroy their purposes.

I would like to hear a comment from the Minister, or one of the Deputies, to find out if there have been such cases in the last few years or that such a situation can exist.

Mr. Gilbert: Mr. Chairman, on a point of information, I think I should read into the record part of the answer that I received from Mr. Laing concerning this particular problem. On page 2 of his letter, which was sent to me dated January 17, 1969, he refers to the collusive aspects of these interlinked construction companies, and he says:

There are, of course, cases of this nature on record and these have received a considerable degree of publicity. I feel, however, that this publicity cannot be taken as in any way indicative of the prevalence of the practice.

In fairness to Mr. Laing and to apprise the Committee of his answer, I thought I should read that into the record. Perhaps the Minister could tell us, Mr. Langlois, what he means by, "There are...cases of this nature on record." Maybe he can assist us with that.

Mr. Laing: I think we have let contracts in history to firms that we found were owned by another firm but they already had the work. It is an industry in which there is a tremendous amount of change and a great number of firms have put their resources together.

The construction industry constantly makes representations to us that they want to do away with the peaks and hollows in the business. They claim that government is the biggest single employer in the country of the construction industry and if we could arrange to do the same amount of work every year, it would be better for all concerned, including us. I agree with that because I know nothing about the construction industry and I am entirely a layman in respect of public works. What has always alarmed me about construction companies is the fantastic amount of machinery that is not operating all the time, acres of it sitting there idle. If this could be levelled out and the machinery put to work it seems to me economy would be arranged all around.

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We have had instances where out of mergers and out of purchases and out of re-organizations I think it is known that we have let

contracts to firms that we found were owned by somebody else after they got to work. It deals with the characteristics of the industry as a whole and it is a difficult industry. We have committed ourselves during this coming year to have a number of talks with the Canadian construction industry. They also are talking to labour because this is a great factor in their industry as well and one where some rationalization in the direction of economy, I think, is possible. I cannot recall that letter, I guess I signed it, but the inference that this is common, I do think, is not correct.

Mr. Gilbert: I think Mr. Langlois has a question.

Mr. Langlois: Is it possible that out of the seven bid average on contracts of \$1 million and over that they all belong to the same people?

Mr. Williams: No.

Mr. Laing: On Thursday, we will table a list of the large contracts and who tendered.

Mr. Gilbert: I would appreciate that.

Mr. Laing: It will be some help.

Mr. Langlois: All those contracts would have been on notice, they would have been public bids anyway?

Mr. Laing: That is correct, Mr. Langlois.

Mr. Deakon: Mr. Chairman, I would like to ask the Minister or any of his colleagues, in view of the fact that the provincial Government of Ontario in co-operation with the municipal council of Toronto are venturing into a project adjacent to the CNE whereby the provincial Government of Ontario is contributing \$13 million, is there anything that the Public Works Department contemplates for the Toronto lakefront in co-operation with this particular proposed scheme?

Mr. Lalonde: Mr. Chairman, originally we had plans to build a new postal terminal in that area.

An hon. Member: The lakefront near CNE?

Mr. Lalonde: Oh, I am sorry, at the moment there are no plans.

Mr. Deakon: In other words, am I correct in assuming that the federal government is not assisting in anyway at all on this project?

Mr. Williams: Not the Department of Public Works.

Mr. Laing: What about other departments?

Mr. Williams: I cannot answer for requests they may have under consideration, I do not know.

Mr. Laing: I thought there was dredging to be done.

Mr. Williams: Not on the CNE proposal.

Mr. Deakon: What is the answer, Mr. Chairman?

Mr. Lalonde: The Department has not been approached in any way to contribute to this project.

Mr. Laing: I thought there was something that is why we were whispering here. The Department has been approached but in respect of dredging the Toronto harbour and not in respect of land adjacent to the CNE.

Mr. Deakon: What other accommodation and building projects, Mr. Chairman, is the Department contemplating for the Toronto area; that is, aside from this particular one?

Mr. Lalonde: I am sorry, Mr. Deakon, I got confused between the two. We had plans to build a postal terminal near the Union Station. Representations were made by Metropolitan Toronto related to their plan for the over-all development of that area, in which they asked us to stop the planning we were doing. The government acceded to that request and at the moment the Post Office Department and we are making a complete study of accommodation in the Toronto area, not only for the Post Office, but for all of the other requirements we have. However, we have not yet reached any conclusion on what is required or where it may be built.

Mr. Deakon: I see. I then have one further question if I may. The Department must be complimented and commended for their approach regarding a certain standard module in construction, namely, a four inch module which I notice you have mentioned. How does this compare with other construction methods in the construction industry?

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Mr. Langford: It is complementary as far as we can make out. Certain segments of the construction supply part of the industry, the masonry, for example, and the steel fabricators, have agreed they would be able to pro-

duce and manufacture standard components that would fit into this module. Starting March 31 we are undertaking to have all of our consultants and all of our own design offices do all of our designs based on this modular approach, and we have had a good deal of correspondence. The Department of Industry has undertaken a fairly extensive program with various industries, and the best way to know is to actually try it. The Department is initiating this in all our work from March 31 on.

Mr. Deakon: And you are not aware whether it may conflict with any other module that private industry may have set up at present?

Mr. Langford: No; to our knowledge it will even reach as far as eventual possible use in a metric system. It is based on that approach.

Mr. Deakon: Thank you, Mr. Chairman.

The Chairman: We have had 16 questioners on the first round. I assume that is all we are going to have.

As you will recall, and in accordance with the recommendations of our steering committee, which were adopted by this Committee as a whole, on the second round of questioning you may ask supplementaries; but we will try to keep them in moderation so that we will not get bogged down.

I will call upon Mr. Aiken to start the second round.

Mr. Aiken: Thank you, Mr. Chairman. I have three questions I would like to ask. The first two relate to harbours and rivers and the other relates to small post offices.

First, do I understand that the former Harbours and Rivers Branch is no longer in existence.

Mr. Lalonde: As such, Mr. Aiken.

Mr. Aiken: I ask this because the debates reporters were inquiring about this this morning. There is no such branch listed now for your Department. Is this part of the reorganization that was undertaken?

Mr. Lalonde: That is right, Mr. Chairman. You will notice, however, in your Blue Book, that all of the projects coming within that category are still called Harbours and Rivers Engineering Services.

In the decentralization we retain the same components that the Department had before, but we group them within regional offices and

district offices, with the people who were doing the harbours and rivers type of work in most cases still doing it in the district or regional offices; and Mr. Hurst, Director, of Engineering Planning at headquarters, who was connected with the Harbours and Rivers Branch when it existed as such.

The work is still done on the same basis but through different channels of communication and in different areas.

Mr. Aiken: Thank you very much. My next question relates to public wharves. It arises out of a particular instance, which I am only using as an example, at Beaumaris. This is a long-established wharf. It has been there since the beginning of settlement. There were two docks there and the Department of Public Works seemed very anxious to dispose of one—so anxious that the township had to buy it to prevent it getting into private hands. Is there a fairly consistent policy by which many of these docks are being unloaded, if I may so put it, on to municipal corporations?

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Mr. Williams: In a sense, here again it depends on the use. When the wharves and the docks were originally built the transportation and commercial patterns were such that two were required. With the passage of time and the improvement of highways and other facilities for transportation, the need is not so great. Also, you have a greater volume carried by fewer numbers.

Therefore, what served many years ago is no longer appropriate, and we are trying to consolidate and concentrate on fewer, but better, modern facilities. In some cases this means abandonment of certain facilities that were there before.

Mr. Aiken: Mr. Chairman, this may not be the place to raise this particular issue, but the whole thing arose because they needed more space. I thought the decision was very, very wrong. As a matter of fact, the township—a municipal corporation—has now had to buy a federal dock to keep it from falling into private hands; and it is used.

The explanation given was that the Department was trying to get the municipalities to take these where they could. This municipality really does not want it and cannot afford it. I take it that it is not, in fact, the policy to try to get these municipal corporations to take over a federal dock.

Mr. Williams: It is a policy to try to consolidate the service we give in the most efficient manner. If we are running two of them and can handle it with one we would like to improve and consolidate on the one.

On this specific example I am at a bit of a loss, because I do not know it as well as you obviously do, but the situation which can develop is that we may have a wharf which was built for commercial and fishing purposes and it is being taken over by pleasure craft and tourist facilities which could be accommodated by a private entrepreneur or a municipality. There was a situation where we offered it for disposal through Crown Assets Disposal Corporation, and it could have gone to one or the other, and either of them could have run a commercial facility for the pleasure craft.

Mr. Aiken: I will not press that point any further at the moment.

Mr. Lalonde: Apparently, Mr. Aiken, none of us is familiar with the details of this particular one. May we note the name and enquire, and perhaps report to the Committee later?

Mr. Aiken: Yes. It is the federal dock at Beaumaris.

Mr. Lalonde: That is in Ontario?

Mr. Aiken: In Ontario; it is on Muskoka Lake. I felt that the decision was wrong. I could not see why the municipal corporation should have to buy the dock. It is used. The whole issue arose when they asked for more federal dockage and space, and out of that request for more space they had to buy the dock to retain what they had.

Mr. Lalonde: I would like to get the details and discuss it later.

Mr. Aiken: Any second question also relates to small boat facilities. Is any arrangement being made, or promoted, for pumping facilities for the sewage containers that are going to be put into small boats? I think it starts this year in the province of Ontario.

I raise the issue because Ontario is certainly forcing the small boat operators to contain their sewage within their boats and have it pumped out. But there seems to be a very slow rate of development of pumping facilities at either public or private marinas.

Mr. Williams: As I recall, the regulation is a provincial one. We did have inquiries, and our Toronto district office provided information to the appropriate provincial department

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on the location of installations we had, which they were going to look at and then suggest to us certain places where they, or someone else, would make installations.

The information on our inventory of wharves, and on our plans for those, was given by our Toronto district office to the province, but I must admit I do not know what the province has since done with it.

Mr. Aiken: Is the Department actually trying to develop a policy on any public provision of these pumping facilities, or are you going to leave it to private operators?

Mr. Williams: Again the requirement is as a result of a provincial regulation, and it will be the provincial government who will make the arrangements, whether they be private or government.

Mr. Aiken: You are going to leave it? They started it and they can finish it?

Mr. Williams: That is correct. The federal government had no part in making this regulation. Therefore, we are not reacting to it.

Mr. Aiken: I appreciate the answer, but the argument I want to make is that I would have thought that the federal government should have been in it anyhow; but that because they did not move there should be a real effort at co-operation with the Ontario government, because it is a pollution problem.

Mr. Williams: That is correct; and there is co-operation and collaboration on pollution control between the federal and the provincial governments. But in this specific area of pollution, as I say, the provincial government took the action and we on the federal side presume that they will take the consequent action arising from the regulation they have made.

Mr. Aiken: I have one further question on another subject.

Mr. Deakon: I have a supplementary on that, Mr. Chairman, relative to the licensing of these motor boats. Who obtains the revenue from the licensing of these?

Mr. Williams: It is not Public Works.

The Chairman: Order, please, Mr. Aiken, have you completed your questioning?

Mr. Aiken: I have one more on another subject, if I may. It relates to the small post offices program.

I have rather lost track of what is the current policy on the construction of small post offices. They used to be constructed under what was roughly known as the Winter Works Program, and they used to run up to \$25,000, as I recall, including land and architect fees and buildings. What is the current policy? Is this program still continuing, or is it more of a requirement and need program now?

Mr. Lalonde: Mr. Chairman, the Winter Works Program, as such, was carried out for certain purposes which the Cabinet has defined as providing work during the winter. During the few years that I was connected with it I found that between 10 per cent and 15 per cent of the actual work could be done during the winter. Most of it was done during the spring and the summer.

After taking a second look at it, it was decided that the answer was not necessarily a winter works program, as a special program, but a regular program of post office construction planned a year and a half ahead of time and scheduling some of the work of those regular post offices to be done during the winter. I think it has worked better that way.

Mr. Aiken: As I understand it, then, the same program is continuing, but it is no longer a winter works program, as such?

Mr. Lalonde: That is correct, Mr. Aiken.

Mr. Aiken: Could you tell me roughly how many of such buildings are constructed during the course of a year?

• 1645

Mr. Lalonde: Would you mind, Mr. Aiken, if we gave you an accurate figure? At the moment I think we would be doing a little bit of guessing.

Mr. Aiken: I would like that and I also would like to know if there is in prospect a small post office for Trout Creek in the district of Parry Sound. Thank you, Mr. Chairman.

29544—2

Mr. Lind: Through you, Mr. Chairman, did the Department take into consideration the possible expansion of these small post offices in small villages? There are some villages that are decreasing in size and others that are increasing pretty rapidly. Do they do a survey before these post offices are built to anticipate future expansion and future needs?

Mr. Williams: Yes, this is part of the statement of requirements which the Post Office provides to us. They indicate first of all the priority and then they indicate the class of office they wish to install. When they make their analysis of it they attempt to forecast what it will be, a 5-year, 10-year—again depending on the class of facility that will go in. In their examination of it, depending on the type of community, it may be advantageous not to build in a lot of expansion space in that particular location but rather to repeat the facility in some other location in case they move into or even go so far as letter walks and service to the public. So they do attempt to forecast expansion and they base their program, which they ask us to do, on that, but the forecast is basically a post office function.

Mr. Lind: I have one further question, Mr. Chairman. In the maintenance of these small post offices in out-of-the-way places, in the janitorial services, do they usually try to employ local help or is this work let out to cleaning companies that make a profession of this now?

Mr. Williams: In small post offices the endeavour is to use local labour. In many cases it is on the basis of calling a local bid for the cleaning of that particular small post office. In some cases it is not a full-time job and in any case it is always done at odd hours.

Mr. Lind: Just lately I have had instances where they have engaged a cleaning firm to do this work, through Public Works, I think, and then have advertised locally for a person to do the work and taken it away from the old custodian or whoever looked after it. What is the procedure on this? Sometimes these firms are going 35 or 40 miles to take these contracts and then this is the procedure, I have found out. I am referring particularly to the Park Hill Post Office where they let the janitor go, gave the work to a cleaning firm and then they advertised locally for somebody to do this cleaning work.

Mr. Williams: May I look at that one specifically and report at the next meeting?

Mr. Lind: Surely. Thank you very much, Mr. Chairman.

Mr. Aiken: May I ask a supplementary on my own question? It has always intrigued me how the Public Service Commission can come to a conclusion on the qualifications of a person applying for a cleaning job because educational requirements are put in and so on. I could never figure out what sort of qualification a person had to have. They call public tenders, which I think is commendable, but how on earth can one ever decide? Is there anyone in the Department who has sat on one of these boards and decided which of two or three people could best do a cleaning job?

• 1650

Mr. Lalonde: We have not sat on any of those boards.

Mr. Code: I would like to ask a question on the awarding of contracts to contractors to build post offices. Would there be any clause in the contract stipulating whether the main contractor would be responsible for any debts that a subcontractor incurred such as the paying of men's wages if he sublet part of that work? I know of one post office under construction at the present time where the subcontractor tore the old building down. I cannot say positively but I understand that the income tax stepped in and took his pay for payments that he had not made to the income tax previously under some other contract and that two of the banks and several merchants in the area were left holding the bag. Would it be possible to put in the contracts that are awarded that the main contractor will be responsible because he is the one who awards these subcontracts to other people? Is there anything in the contract to indicate that the main contractor would be responsible?

Mr. Williams: In the first place in contracts in excess of \$25,000 there is a bond, a labour and materials bond, which guarantees payment by the bonding company in lieu of the contractor for materials and labour directly employed by the prime contractor. If he has a subcontractor there is not a requirement that he must bond the subcontractor to the same degree but there is in the general contract conditions a clause which permits the government, where we can establish it is direct labour or direct materials supplied to a sub-

contractor, to make payment direct to cover those. It is not always as clear-cut as that because in some cases you have to establish that it was labour and materials relative to that specific job. Over it all, I think it is the Financial Administration Act which provides that the Government of Canada has first call on the money if there is a recovery of debts owing to the Crown.

Mr. Code: This was in the demolition of the old buildings on the post office site and there would not be any materials involved but the labour end of it is not so good.

Mr. Williams: If there is not enough money, what is left is prorated to the creditors.

Mr. Code: What procedure would people take if they worked on this project and were issued worthless cheques? Two of the banks in the area are holding these cheques and merchants in this municipality have not received payment. It is not a good situation. I just wondered if this situation could be corrected and the main contractor be held responsible because he is the person who hires the subcontractors.

Mr. Williams: As I say, sir, there is more protection in a government contract than there is in work he would do for any other...

Mr. Code: Could you tell me how these labourers who worked for them can collect their money?

Mr. Williams: Yes. They file their complaints with the nearest office of the Department of Labour, or directly with the Department of Public Works. I would be surprised if they had not done so.

Mr. Code: This went on for a good month that I know of and it had not been done. And what about the banks that cashed these cheques?

Mr. Williams: I will not commit myself on the bank question because the banks have their own regulations. If a man happens to have an account in that bank the money will be taken out of his account. I would not say what would be the situation for the bank. If they are out of money I am quite sure that if they have not done so they will be writing to the Department very shortly.

• 1655

Mr. Lalonde: It is even more complex than that, though, because in many instances the

main contractor has already paid his subcontractor and the subcontractor has not paid his debts, so there is a possibility that the main contractor may have to pay twice.

Mr. Code: I understand that the subcontractor had to pay the amount of income tax that the main contractor should have paid for the employees and that the government stepped in and took this money.

Mr. Lalonde: There is protection for the labourers of the people who work on that particular job site. There is protection under the Department of Labour Act.

The Chairman: Gentlemen, I believe, we have had nine or ten supplementaries on Mr. Aiken's post office question so I think I am justified in calling that enough discussion. We will go on to Mr. Gilbert. There are certain questions that your Chairman would like to ask too but unfortunately I have not put myself in a slot here so Mr. Gilbert, do go ahead.

Mr. Gilbert: I will certainly bow to your right to ask questions because you have been more than co-operative and I am sure that the members of the Committee would agree that you should have the right to ask questions next.

The Chairman: Thanks, Mr. Gilbert. My first question refers to a boat-launching ramp and dock on the Ottawa River at Petawawa Point. The Rolphton hydro dam is about 30 miles upstream and during the summer months as a result of this the water in the Ottawa River goes up and down like a yo-yo. There are times when there is not enough water to bring your boat in close to shore to load on the trailers and there are other times of the year when the water is right over the dock itself. To correct a situation such as this is it not possible for a floating dock to be attached to the end of the concrete dock so that during the summer months when the water is low the many tourists and local people who use this facility could drive in to the floating dock? As it is it really is not satisfactory.

Mr. Williams: I would like to investigate it. I cannot say automatically it can or cannot. I do not know the circumstances enough to be able to say one way or the other but we will look into the matter. I am not sure that we can have the information for the next sitting but we will look into it and report.

Mr. Laing: What is the greatest difference in the water height?

The Chairman: I would say it would probably vary by four to five feet from spring to fall. My second and last question refers to the building of a post office in which the main contractor hired a firm to do the electrical work. After the work was completed he moved away without paying the electrical contractor, owing him over \$1,400. I am wondering if there is not some way in which this subcontractor who did the electrical work can collect his money for this work?

Mr. Williams: Again I would have to know the specific job to know what was done but if it is a job which required a labour and

• 1700

materials bond then the subcontractor was required to file a complaint, a notice to collect, with the Department and with the bonding company. He is advised of the bond when he subcontracts. He is required to do so and I do not know whether he has done or did not do so, but in some cases we do have the situation where a sub-contractor will be doing a continuing work with the prime contractor and by his own arrangement he will neglect to take the action to protect himself as provided for in the contract. He will let the thing lag and he will waive his rights under the bond.

The other situation which develops is that he will have a claim which will be in dispute with the prime contractor, in which case it is the position of the Department that if there is a claim that is registered with us that is not accepted by the bonding company, but there is a claim and it is unresolved, we will, if we are notified in time, retain funds from the general contractor and hold them to give the parties time to come together if they can, and if not, to give the sub-contractor ample amount of opportunity to protect himself legally for the payment of the claim.

The Chairman: In this particular case the sub-contractor had done work for the Department of Public Works on previous occasions and had received official notice of the final date of payment of the prime contractor. In this particular case I understand that he did not receive notice and that the prime contractor was paid, I believe, on December 2. When the sub-contractor came after his money after that date he found that there was nothing left there for him.

Mr. Lalonde: This is very interesting, Mr. Chairman, because the final payment to the main contractor cannot be made without his signing a statutory declaration that he has paid his subs. So if he did sign that statutory declaration, we would like to know because apparently it was a false one. We have been prosecuting people who make false statutory declarations, so I think we want to look into that.

Mr. Williams: Can you give us the location?

The Chairman: Yes, the location is Rolph-ton, Ontario, and I would like you to look into it on behalf of this man.

Mr. Lind: One further supplementary along the same line, if I may, Mr. Chairman. In addition to the bond that you have for materials and labour, do you require in your contract the normal 15 per cent holdback for so many days?

Mr. Williams: Yes, in addition to the labour and materials bond we have a performance bond.

Mr. Lind: Yes.

Mr. Williams: And with the performance bond the holdback is 5 per cent.

Mr. Lind: Of the total project?

Mr. Williams: That is right.

Mr. Lind: For how long a time?

Mr. Williams: We hold this until the completion of the contract, or if it is something that is held over the winter and there is no question about whether the man is going to finish and we are perfectly secure, we will release the part that is no longer required to secure it.

Mr. Lind: Coming back to the main contractor signing this declaration that all the subs and materials are paid for, he has to do this before he receives this final 5 per cent payment?

Mr. Williams: His final contract payment, yes.

• 1705

Mr. Code: What would the penalty be if the contractor signed a declaration that he paid all his debts and he had not?

Mr. Williams: It is a criminal action.

The Chairman: Thank you very much.

Mr. Harding: Could I just ask another question? I am interested in this aspect of the prime contractors not paying all their bills. It is a criminal action, and who must process this? Does the Department do it? Or does the individual who has lost some money, the sub-contractor, do it?

Mr. Williams: If he has given us a false statutory declaration, the Department of Justice will take the action.

Mr. Harding: I see. That is very interesting.

The Chairman: Gentlemen, my time is up. I believe Mr. Hymmen has a supplementary question.

Mr. Hymmen: Mr. Chairman, mine is not a supplementary. Mine is another question. And so that all our questioning is not necessarily on a parochial nature, I refer to something of interest to the City of Toronto. It concerns a recent announcement of the moving of, I believe, the Divisional Headquarters of the Unemployment Insurance Commission to Belleville. I would like to ask the Minister or his officials whether they have been asked by UIC to provide facilities for the new headquarters in Belleville. The reason I ask this is that I understand, subject to correction, that the UIC has considerable autonomy and may not necessarily be required to accept the recommendations which the Department makes.

Mr. Williams: Yes, the UIC requested us to provide accommodation. They made a study of where they wished to be and they elected to be at Belleville. This Department has called a build-to-lease tender and has awarded the contract on that basis.

Mr. Hymmen: In their present location in the City of Toronto—I do not know whether this is a federally owned building, or leased quarters—is there any problem in the termination of that lease?

Mr. Williams: If you like, we will have it checked, but I am reasonably sure it is a federal building and we have a requirement for the space.

Mr. Hymmen: The third question is one I cannot ask here. I would like to know—and I would have to ask the UIC—what criteria they used in deciding to locate in Belleville, but that is aside from the subject.

Mr. Williams: You would have to ask the UIC.

Mr. Hymmen: I have a suggestion of benefit to the Committee. I understand that the Department is in charge of the administration of the Trans-Canada Highway Act and there is an annual publication, Report and Proceedings under the Trans-Canada Highway Act, and I wonder whether the Clerk could obtain the copies for the year ending 1967 and the year ending 1968, and also a copy of the Annual Report of the Department of Public Works for the year ending 1968 as soon as it is available?

The Chairman: Thank you, Mr. Gilbert, for your patience. I will let you go ahead.

Mr. Gilbert: Mr. Chairman, I want to get back and ask the Minister some questions, and I would like to preface them by saying that I appreciate the Minister expressing his intention to file with the Committee the names of contractors whose contracts amount to over \$1 million. Mr. Minister, the problem is that even though we do get a list of the contractors, it is a far more subtle problem than that because you have to look at the corporate structure of these contracting companies.

Mr. Laing may well be right with regard to building contractors, but among the road contractors, when one contractor wants to take over another contractor, he uses a kind of corporate sophistication about which we should be aware. He requires that the name of the company that he is taking over be retained. In many cases he requires that the president, even though he has not much by way of ownership, remain as president. This gives the public an impression that the company is still in business and the president of that company is still the controlling shareholder, when in fact he is not.

As I say, this is something that has developed in recent years, and it really places a heavy burden on your Department to determine with whom you are dealing because the corporate structure does not indicate, in most cases, the true owner. This is the problem that I understand prevails in certain areas, Mr. Minister, and it is a very difficult problem.

I agree with you that it is necessary probably to rationalize the industry, and this leads me into a comment that it may be wise, Mr. Minister, to set up a Crown corporation, or

even to have a feasibility study with regard to a Crown corporation, which would take into account and use this modular co-ordination idea that you have and build certain buildings, be they post offices or some of the buildings that are set forth in the report of your Building Construction Branch. I notice that penitentiaries are 24.88 per cent, and federal buildings 14.54 per cent. And I am just wondering about setting up this Crown corporation who would act as the main contractor and who would have control of the job, and who would then also have a costing comparison with regard to certain jobs. So that when you do let out other contracts you have a costing equivalent that you can use. I would like to have the Minister comment on those suggestions, whether they are feasible and acceptable.

• 1710

Mr. Laing: In the first instance I would renew what I said the other day. I cannot comprehend why a firm that owns three other firms would have all four or them prepare plans and put them in. This must be very costly. If this sort of thing is going on, it must be with a purpose in view, and I cannot understand what the purpose would be.

Mr. Gilbert: I think the purpose of it is to control the particular industry. Take for instance in road building. If you have say six major contractors in the Province of Ontario, and four or five of those are controlled by one group of owners, then it is to their advantage to create a public impression that these are five separate entities, when in actual fact they are not.

Mr. Williams: If that was the situation, it would be a problem. But to our knowledge this is not the situation in the contracts which we call.

Mr. Gilbert: The problem is, Mr. Williams, that you probably have not done a study of their corporate structure.

Mr. Williams: There is very little on the buying and selling of contracting parties that we are not apprized of.

Mr. Gilbert: I certainly appreciate your comments.

Mr. Lalonde: We have tried out, on a few occasions, a method of prequalification and the Construction Association itself has helped

us in this field. In each case the structure of the firm has been studied jointly by the Association and by ourselves. Those were for major contracts, and we did not find, in any of those cases, evidence of that kind of collusion. As a matter of fact, even if five firms were asked to bid by public bid and they were all controlled by the same people for the express purpose of raising the total amount of the bid to give them a chance to make a higher profit, we would always compare that bid with the estimates which we made and on which I think we are getting much better since we have adopted new methods of estimating. If the low bid is higher than our estimate to any substantial degree, we throw the whole thing out.

Mr. Laing: And start over again.

Mr. Lalonde: It would not pay them to do that.

Mr. Laing: We had one in Saskatchewan last week. We are recalling it, I presume, but it was 30 per cent. I think the lowest bid was 30 per cent higher than our estimate. We are finding, however, that the quotations that are coming in are much nearer estimates, and this is indicative of the volume of business that is being offered these people. They seem to be more competitive, which would be in line with the thought that there is competition. We hear a lot of these stories. I have heard for years that where there is a limited number of contractors, the boys sometimes take turns on quoting low. This has been said. We are told in other places there are entire areas where, when it is government work, they all quote high. I cannot prove this. This charge is made but it is not very easy to bring forth proof. It is an unfortunate thing to hear these stories in respect of an industry, I am sure we have no proof for them.

• 1715

Mr. Hymmen: I have a supplementary question, Mr. Minister. Is it not true that very often the timing of the calling of tenders has some bearing on the price?

Mr. Laing: Exactly. There is no question about that. In the northern parts of Canada, because of the short building season, our method of financing and waiting for April 1 in some instances is all wrong. We should have the specifications out months before to give the man an opportunity to use the best time in a short building season. This clashes

with the processes of government appropriations, but we should have that; it would be much more businesslike if we had it. I think this sort of thing should be obvious to business people.

Mr. Gilbert: What are your views with regard to rationalizing the industry? You made that comment, Mr. Minister, and I suggested that it may be wise to set up a Crown corporation.

Mr. Laing: I know enough about the Department now to realize that our difficulties in designing buildings and providing appropriate space for departments are far more internal than external. When we are building a building in a certain place we have great difficulty in getting the departments to give us the space we require, and once we are launched on them they are forever amending them. Once we get into a building a tremendous number of amendments and changes are made in the design and everything else. This is where our cost is high. It is because of the changes in the requirements of various departments and the desires of most departments and the personnel of government to grade up today. They want better space and more of it and with rugs on the floors. All of this cost money and this has to do with the general cost of accommodating the people in government. The same sort of thing is going on in private industry. If you go into private offices today you will find that some of them are pretty darn plush. I guess it is a habit that people have.

Mr. Gilbert: What does Mr. Lalonde think about setting up a Crown corporation? Is it feasible to do it?

Mr. Lalonde: I must confess, Mr. Chairman, that I do not comprehend very clearly what it could achieve if the Crown Corporation were set up for the purpose of comparing what it would cost the government to build as a general contractor.

Mr. Gilbert: No, it would be a builder, Mr. Lalonde. It would build.

Mr. Lalonde: You mean it would replace all of the general contractors across the country?

Mr. Gilbert: No, I am not saying that. I am saying that it would be the contractor who would build certain buildings and it would act as the general contractor, and if it was

going to subtrade it would subtrade. It would also give the Department this costing comparison.

Mr. Laing: What would we do, hire day labour?

Mr. Gilbert: Day labour? What do you mean by that?

Mr. Laing: Where would the Crown corporation get its help? Would we hire day labour?

Mr. Gilbert: Right.

Mr. Laing: I do not think labour would want that.

Mr. Langlois: On a point of order, Mr. Chairman. We do not need a Crown corporation to do that. Public Works can go around and just say that we are going to build, we are not going to ask for this. I know very well what will happen if we start to do that.

Mr. Laing: I do not know where the economy would take place. This is what baffles me. The economies that can be made are in having a clear-cut plan which is not amendable after you start. In accommodating government services this is very difficult.

Mr. Gilbert: The best example of this is the art centre, is it not, Mr. Minister, where the cost...

Mr. Laing: Did you say the best example?

Mr. Gilbert: The best example of the Department not having control over this particular building.

Mr. Laing: But a Crown corporation acting as a main contractor would have no more control over the requirements than the Department of Public Works has now. The only change would be that instead of asking the general contractor to choose the list his subcontractor in a public bid, we would be

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expected to go out and shop with every subcontractor to get the best price. There would be no end to it. It would be a fantastic operation and you would put a great number of people out of business in this country.

Mr. Sulatycky: Mr. Chairman, in that connection, as far as highway construction is concerned it was tried in Saskatchewan and it was proved unworkable.

Mr. Lalonde: I do not think they have the same degree of volume that we have, for one thing.

Mr. Sulatycky: No, they do not have the volume but the principle...

Mr. Laing: I know what Mr. Gilbert is driving at—at least I think I do—in part, although he probably wants the government to build everything.

Mr. Gilbert: No, I do not think so.

Mr. Laing: I can give you an example of this where we are doing what I think in part he probably wants us to do. He wants us to operate a control system. We do this in dredging, and I have spoken to my people about it where there is probably only one or two dredging companies on a coast, and there are places where there is probably only one dredging company on a coast, and this is probably the main reason we operate some dredges of our own, which has a disciplining effect on the cost of dredging, we think.

Mr. Gilbert: If you carry that over into the building industry it just may have the same effect.

The Chairman: I think, Mr. Gilbert, your time is about up. Perhaps you could round it up with one question, and then Mr. Code has a supplementary.

Mr. Chappell: Mr. Chairman, I have tried many times to ask one supplemental on this point.

The Chairman: Mr. Code was ahead of you.

Mr. Chappell: On a supplemental?

The Chairman: Yes, and then Mr. Chappell. Order, please. Mr. Gilbert, you are next.

Mr. Gilbert: Mr. Chairman, the Minister and his associates are thinking about this problem. I am glad the Minister used that example of dredging because it is a good one. It certainly may be able to be carried over into the building industry. One final question, Mr. Chairman, if I may, which is not related to this. It is related to the expansion of Malton airport. Once that expansion is decided upon does the Department of Public Works carry out the plans?

Mr. Laing: No. The Department of Transport has been building its own airports.

Mr. Gilbert: Fine. Thank you.

The Chairman: Mr. Code on a supplementary, and I wonder if we could round it up quickly.

Mr. Code: In regard to what Mr. Gilbert mentioned about roads and buildings, I think a very good example was the Department of Northern Development which the Ontario government had some years ago, and they used to build roads. They could not compete with the prices the contractors gave so they gave up this Department of Northern Development, and from the experience I have had during my lifetime in the construction business I do not think you can get anything better than what the department has right today.

Mr. Chappell: In line with Mr. Gilbert's questioning I want to ask the Minister if he realizes that this government prosecuted the road builders in Ontario two years ago for doing the very thing that Mr. Gilbert is afraid of. All the main contractors were putting in bids in such a manner that they could take turns on who would get it. The other bids were obviously high. They were the paving firms and the road builders, but it certainly can happen and I think Mr. Gilbert has a point. I am not saying that it is happening but it certainly can happen.

Mr. Laing: We will watch and pray.

Mr. Roy (Timmins): Mr. Chairman, to leave the impression that the Department of Public Works does not know the value of the work that it gets done is absolutely ridiculous. Also, the impression that contractors are a bunch of crooks that are out to take the public at whatever cost is another really ridiculous impression to leave.

Mr. Deakon: Mr. Chairman...

The Chairman: Order, please.

Mr. Roy (Timmins): We have heard about these things and, we do not make general

rules out of cases here and there, and the type of insinuations and half accusations and half—I do not know what—allegations that were made at least week's meeting and in this particular meeting are nothing but fishing expeditions after the construction business. I strongly suggest that the Department consider putting out a booklet of some sort to explain to members who have no knowledge of the construction, architectural and engineering businesses the type of operations that these businesses carry on, the type of tendering they do, and to explain fully and clearly the safeguards that are implicit in these operations so that we do not have these insinuations and half accusations about this industry all the time.

Mr. Chappell: Mr. Chairman, may I speak to a point of order? I say with respect that I do not think Mr. Gilbert was making insinuations, and certainly I was not. I think it is a point worth bringing up. If the contractors do not know this and they get together and get prosecuted under the Combines Investigation Act, I think it is a proper thing for us to bring up in this Committee so that the officials will know. I can give my friend Mr. Roy the citation of the case so he can get a surprise when he reads it.

The Chairman: Order, please.

Mr. Deakon: On a point of privilege.

The Chairman: If I may bring the meeting to order.

Mr. Badanai: I move the meeting adjourn.

The Chairman: I would like to say that Mr. Roy is next on the list for questioning. We are nearing 5.30 p.m. and we decided that our meetings should not run more than two hours, so I think now that you are all pepped up for the next meeting and raring to go it is a good time to adjourn the meeting. We will meet again on Thursday at 8.00 p.m. Thank you, gentlemen. Meeting adjourned.

HOUSE OF COMMONS
First Session—Twenty-eighth Parliament
1968-69

STANDING COMMITTEE
ON

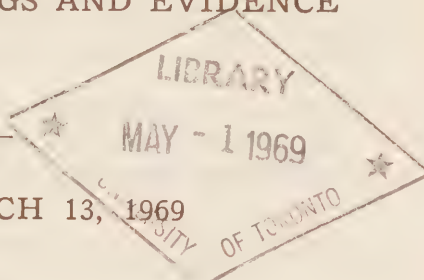
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 14

THURSDAY, MARCH 13, 1969



Respecting

Main Estimates (1969-70) of the Department of Public Works

WITNESSES:

(See Minutes of Proceedings)

THE QUEEN'S PRINTER, OTTAWA, 1969

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

Aiken,
Badanai,
Beaudoin,
Chappell,
Code,
Comeau,
Deakon,

Gilbert,
Harding,
Langlois,
Lind,
Moores (*Bonavista-
Trinity-Conception*),

¹ Orange,
Paproski,
Ritchie,
Roy (*Timmins*),
Sulatycky,
² Whicher—(20).

(Quorum 11)

J. H. Bennett,
Clerk of the Committee.

Pursuant to S.O. 65(4) (b)

¹ Replaced Mr. Breau on March 13, 1969.

² Replaced Mr. Hogarth on March 13, 1969.

MINUTES OF PROCEEDINGS

THURSDAY, March 13, 1969.

(14)

[Text]

The Standing Committee on National Resources and Public Works met this day at 8.15 p.m., the Chairman, Mr. Hopkins presiding.

Members present: Messrs. Aiken, Badanai, Chappell, Code, Comeau, Deakon, Harding, Hopkins, Hymmen, Langlois, Lind, Orange, Ritchie, Roy (*Timmins*), Sulatycky, Whicher—(16).

Witnesses: From the Department of Public Works: Messrs. L. Lalonde, Deputy Minister; J. A. Langford, Assistant Deputy Minister (Design); C. Hurst, Director of Engineering Planning; W. Binks, Chief, Civil Engineering Programmes.

The Chairman called Item 1—General Administration, 1969-70 Estimates, Department of Public Works and the Committee resumed their examination of the Departmental officials.

Mr. Lalonde, Deputy Minister of Public Works answered questions asked at the previous meetings.

On motion of Mr. Sulatycky, it was *resolved*,—

That the two lists tabled by the Deputy Minister of Public Works in answer to questions by Messrs. Paproski and Langlois be appended to today's Minutes of Proceedings and Evidence—

1968-69 Projects and Name of Consultants (*As Appendix D*)

and

Contracts—\$2 Million and Over—Awarded by Department of Public Works in 1968. (*As Appendix E*).

The Committee continued their examination of the Deputy Minister of Public Works who was assisted by departmental officials, Messrs. Langford, Hurst and Binks.

At 10.00 p.m. the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Thursday, 13 March 1969

• 2015

The Chairman: Gentlemen, I see a quorum. I will call the meeting to order.

The Minister is not going to be with us tonight. The Parliamentary Secretary is sitting in to answer questions or to take notice of questions that are of a political nature.

Before continuing with the second round of speakers I believe Mr. Lalonde has some remarks to make. I would like to take this opportunity to welcome the officials back to our meeting for the third time.

Mr. L. Lalonde (Deputy Minister, Department of Public Works): Thank you, Mr. Chairman.

At the last meeting of the Committee there were some questions asked by members about a number of projects. With your permission I would like to give the answers that are available at this time.

The first was asked by Mr. Roy about a post office at Ansonville. The building which is to be constructed in Ansonville is a standard plan post office with a gross area of 2,422 square feet. We checked with the Post Office department yesterday and they told us that they are satisfied with the building as it is planned and that they do not contemplate a letter carrier service in the foreseeable future.

The second question was asked by Mr. Harding in connection with the development of Rykerts boat basin in British Columbia. The project is not one that comes under the marina policy because as the Minister explained at the first meeting, the marina policy allows the Department to contribute to the Development of the project only the dredging of the approaches or the construction of a breakwater. In the case of the Rykerts boat basin neither of those are required.

The question of a launching ramp under the tourist wharf program would be limited to an expenditure of \$15,000 maximum. After checking with the customs department we find that the count of boats that came from the United States through this basin last year was 30 and under those conditions the department dealing with the customs felt that it was cheaper to rent the wharf to look after this small number of craft than it is to build a launching ramp or a tourist wharf. At the moment the solution of the project so far as federal participation is concerned is still somewhat nebulous.

The third question was also asked by Mr. Harding and it concerned storm damage to the launching ramp at Boswell. We have ascertained that that wharf suffered storm damage last fall. We are now in the process of repairing it and the work is expected to be completed in approximately one week and will cost about \$6,000.

Mr. Harding raised another question about the flooding of Arrow Lakes and the replacement of wharves. We have looked into that but since Mr. Hurst, the Director of Engineering Planning, is more familiar with the area than I am I will ask him to report on this one.

Mr. Hurst (Director Engineering Planning, Department of Public Works): The reason for this problem is that in the development of the Columbia River basin in conjunction with the Canada-United States treaty on the hydro development of the basin the Arrow Lakes dam was part of the arrangement and this resulted in the construction of a dam at Arrow Lakes, which was begun in 1965 and was completed last October. The range of water levels resulting from the new lake would be 70 feet which, as you realize, would be the same as about a seven storey building, and of course the construction of wharves to take care of a fluctuation of this size would be quite difficult. In the development of the project B.C. Hydro agreed to remove the presently constituted wharves which, in the early days of the situation on the Arrow

Lakes, were used for communication between the various villages. In the development of the project there was consolidation of communities and the Hydro agreed that they would replace the wharf at Nakusp and that any other requirement for commercial wharves would be considered in connection with Arrow Lakes if there was no other communication line available—that is, no roads or railways available. There was an exclusion on this in so far as wharves for recreation are concerned. They were excluded and these would have to be considered on their merits. If there was some justification for putting them in then the Department itself would have to consider the possibility of constructing them.

Mr. Harding: Mr. Chairman, could I ask a question on this?

The Chairman: Yes, Mr. Harding.

Mr. Harding: Did I understand you to say that a commercial wharf would be constructed only if there was no other type of communication.

Mr. Hurst: That is the agreement with the B.C. Hydro.

Mr. Harding: You kind of tied your hands on that one, I think.

Mr. Hurst: As I mentioned, a lot of the original wharves were commercial in nature in that they were the only means of communication between the various communities on the lakes. Although the nature of the traffic on lakes now is mostly recreational it was considered at the time when the discussions were under way that justification would have to be on a commercial basis.

Mr. Harding: One further question for clarification, Mr. Chairman. I understand that any launching ramps, even at the present time, is the prerogative of the Department.

Mr. Hurst: Launching ramps are the prerogative of the Department.

Mr. Harding: Even in the year 1969.

Mr. Hurst: That is right.

Mr. Harding: I understand that this agreement which you have with B.C. Hydro extends up to 1974.

Mr. Hurst: That is right.

Mr. Harding: This is just on commercial wharves...

Mr. Hurst: That is right.

Mr. Harding: ... and has nothing to do with launching ramps.

Mr. Hurst: That is right.

Mr. Harding: Thank you very much.

The Chairman: Were you finished, Mr. Hurst?

Mr. Hurst: Yes.

The Chairman: Mr. Lalonde.

Mr. Lalonde: The next question, Mr. Chairman, was asked by Mr. Aiken and it concerned the sale of a wharf at Beaumaris in Ontario to the local municipality. The explanation there is that there are two federal wharfs at this place. One is a concrete structure which is in good condition, the other one is a timber wharf which is in bad condition and is about 100 feet away from the concrete one. The concrete structure was originally built for the purpose of accommodating commercial traffic and apparently this has ceased to exist to any extent and it is now used by pleasure craft. Under normal circumstances we would have abandoned the second wharf because the better wharf, the concrete wharf, could serve the purposes, but the municipality was interested in retaining the two wharfs and we agreed to repair it as best we could and turn it over to them to maintain in the future. There was no sale involved.

• 2025

The next question, again by Mr. Aiken, was a request for the total number of post offices to be built during the year 1969-70. In our program for the coming year we have a total of 148 new post offices or additions to postal facilities ranging in cost between \$25,000 and \$50,000 each. I cannot give you a total cost because since most of the detailed plans for these are not completed we do not know whether we are going to proceed by construction or by asking for build-lease tenders. In addition to this, listed in your Blue Book and costing more than \$50,000 each, there is provision to build 76 additional postal facilities, making a total number of 224 additional postal facilities for the coming year.

There was a question by Mr. Lind about post offices at Glencoe and Park Hill concerning a change in the cleaning contract from a local janitor to a cleaning firm. In both those places we have constructed new buildings. The old buildings were maintained by janitors

or staff cleaners. As you know, the policy has been for some time to go to contract cleaning wherever attrition of cleaning staff permits it. In other words, cleaning staff are not dismissed so that we can change over to contract cleaning.

In Glencoe the caretaker who was looking after the old building had already passed the retirement age and had had two extensions so that he could look after the old building until the new one was built. He was 68 when the new one became available and at that time the policy of attrition was exercised and tenders asked for contract cleaning.

In the case of Park Hill, Mr. MacLeod, the caretaker, submitted his resignation on October 31, 1968. At that time the old building was still occupied so we hired a casual man to look after the building until the new post office became available. This has now happened, again tenders have been asked and the low bidder, Leonard's Window and Floor Cleaning Service, has been awarded the contract for a two-year period.

So there is no change in policy and in those two cases nobody has lost employment.

Mr. Lind: Mr. Chairman, I would like a supplementary on that, if I may. Mr. Lalonde, did it cost the Department any more to hire Leonard's cleaning service than to maintain the regular janitor?

Mr. Lalonde: No, it did not, Mr. Lind, because in both cases the contract is for a two-year period and is for less than \$3,000 a year.

Mr. Lind: Thank you.

Mr. Lalonde: Mr. Langlois had asked that we table a list of all contracts on which public bids had been asked, indicating the number of bids received and the name of the firms who had bid, with the low tender. I have a table here in which we have split the two groups of contracts. First, contracts of \$2 million and over awarded during the year 1968, and then contracts awarded between \$1 million and \$2 million during the same year. In most cases you will see that there were at least four different firms tendering and in the \$2 million and up category usually there were eight, nine or ten firms tendering, as you will see from this list. These cover buildings, construction of postal terminals, construction of laboratories and, construction of highways—I would say that these lists will refer to all

types of contracts that we award under the public tender system.

• 2030

The only tender in which there were less than four public bidders was one for phase three of the trifurcation scheme on the Fraser River in British Columbia. This was mostly for dredging and specialized construction. In this case there were two firms, one was Vancouver Pile Driving and Contracting Company Limited which was the low tenderer, and the other was McKenzie Barge and Derrick Company Limited. We in the department are well aware that these are not too friendly to one another, so I am sure that there is no collusion there.

I would like to table this, Mr. Chairman, perhaps as an appendix to the record. In doing so, however, I feel that I should explain to the Committee that I, on second thought, am perhaps somewhat responsible for the misunderstanding which occurred in the two previous Committee meetings on this subject. When Mr. Gilbert referred the other day to a letter which the Minister had sent him, frankly I did not put two and two together. But when I went back to the office and referred to that particular file I found that I was responsible for initialling the letter for the Minister to sign. On looking back, the wording of the letter and what we had in mind at the time, I realized that we were referring in this paragraph to the very thing that was raised by one member of the Committee the other night when he was talking about what had happened in Ontario under their highway system of contracting. I can assure the Committee that since 1963, when I joined Public Works, we have not had one case of either suspicion of collusion or one case that we had to refer to the Department of Justice under the Combines Investigation Act. So I am sorry that this created an impression with the Committee that is not justified.

Mr. Harding: Mr. Chairman, are copies of this available now, or will they have to be duplicated and given out afterwards?

The Chairman: No, what I was going to do after Mr. Lalonde is finished is ask for a motion that this be added as an appendix to this meeting's report.

Mr. Lalonde: I have another list, Mr. Chairman, that I would like to table as an appendix so it can be circulated with the evidence.

I believe Mr. Paproski asked the question. This is a list of all the projects in the 1968-69 Budget where consultants have been appointed to do the design or engineering work. It shows the place where the project took place, what kind of a project it was and the name of the consulting firm. May I table that, Mr. Chairman.

The Chairman: Mr. Whicher has a supplementary.

Mr. Whicher: I want to apologize because I am just sitting in here tonight. This is the first meeting that I have attended.

• 2035

Mr. Lalonde talked about one particular dock that the department fixed up and then turned it over to a municipality, with no sale involved. What criterion do you use for turning docks over to municipalities? I ask the question because I come from an area where several of these are involved. In some instances the department asks the municipality if they would like to take it over but in others they turn it over to Crown assets and the dock is disposed of.

Mr. Lalonde: The only criterion that we can use is whether there is still a need for that particular wharf at that particular time. In the case that I mentioned we felt that one of the wharfs had become surplus to requirements. In other cases we may have a wharf that is used very little, it may have been built many years ago, is in what we call a state of disrepair and it might be very costly to repair it and maintain it for an indefinite time. If it is in such bad shape that nobody can fix it, we abandon it completely. We have the statutory right to make a declaration to that effect and post it on the wharf. However, if it can still serve some use but not for the use for which it was intended, then we can declare it surplus to Crown assets and then they make whatever arrangements they want to dispose of it. In other cases, such as the one I mentioned, if the municipality comes to us and has an offer which we consider reasonable—I doubt if we would do this if we were dealing with an individual—we would consider it, perhaps simply to save money in the long run by letting go of a facility that we feel is not used under our criteria anymore.

Mr. Whicher: Would you consider it fair, sir, before you abandoned it or turned it over to Crown assets or made a deal with a

municipality that you should let the Member of Parliament for that area know that you had this in mind?

Mr. Lalonde: I will not generalize on this but I think in most instances we have attempted to do that. Quite often the request has come originally from the Member.

Mr. Harding: Mr. Chairman, I have one or two questions I would like to ask about Rykerts basin. Would it be appropriate to ask them now before we get into something new?

The Chairman: May I ask for a motion first that these be added to the minutes and then you can question.

I would like a motion that these two documents, Projects and Name of Consultants 1968-69 and contracts \$2 million and Over Awarded by the Department of Public Works in 1968 be attached to the Minutes of Proceedings and Evidence as an appendix.

Mr. Sulatycky: I so move.

Mr. Harding: I second the motion.

Motion agreed to.

(See appendix attached)

Mr. Harding: Mr. Chairman, I would like to clear up one or two points in connection with this Rykerts boat basin which I raised the other day.

Mr. Lalonde has suggested that only 30 boats were available last year. Now I presume you are talking of those that came through the Customs, are you?

Mr. Lalonde: That is correct sir.

Mr. Harding: I do not think the department can take this as a really fair criterion of the boats that would use this area. They could not be launched at Rykerts; they would have to come on into Canada and go on up. I presume, on Kootenay Lake somewhere to be launched.

I would also like to point out that there is a very large number of Canadian citizens living fairly close to this area. This figure of 30 bears absolutely no relation at all to the number that could and should and will be using this particular basin.

Mr. Lalonde: Would they be considered as tourists though, Mr. Harding? You must remember that this is a tourist wharf policy, not a local boat-owner...

● 2040

Mr. Harding: No, but I understand that local people would be able to use this boat basin too for launching—and it is in connection with a Custom's port. There is no doubt that if there is something there for people to use they come. If there is nothing, it is quite obvious that no one is going to be attracted to this particular spot. I do not think the number of votes coming through is at all a fair indication of the number of people that are going to use the area. The amount of expenditure is extremely small; it is less than \$10,000. The State of Idaho has already put up \$5,000 to assist a project in Canada, and here we are in the strange position of having our own Canadian government unwilling even to match the Idaho donation.

If they are putting up \$5,000, surely all they are asking for is \$10,000. I think the Department should have another look at it.

Mr. Lalonde: I would be very glad to do that, Mr. Harding. As a matter of fact, I was about to suggest that perhaps you and I might get together and verify some of the information I have, which you must realize is second-hand.

Mr. Harding: I would be very happy to meet with you, Mr. Lalonde.

The Chairman: Before continuing, on behalf of Committee members I think I should thank Mr. Lalonde and Mr. Hurst and their colleagues for providing the answers to all these questions in a relatively short period of time.

On the second round of questioning, continuing on Item 1, General Administration, I have the names of Mr. Roy, Mr. Harding, Mr. Chappell and Mr. Orange.

Mr. Roy (Timmins): Mr. Chairman, I want personally to thank Mr. Lalonde for providing the information I asked for regarding the Ansonville Post Office. May I continue with questioning about the design facilities in the Department at which time I was interrupted at the last meeting?

I am wondering if the Department has units of measurement for establishing proposed costs of buildings that are given out to design by consultants? Do you establish per foot costs, in other words? Do you affix objectives to your consultants when you plan a building?

Mr. J. A. Langford (Assistant Deputy Minister (Design) Department of Public Works): Yes; in general before we decide to go to construction and design of a building we do a costing exercise to establish, in our opinion, the most economical way of doing this. We usually have an over-all cost picture in mind. It is predicated on various estimating procedures and the most common one, of course, is the cost per square foot basis.

This varies from region to region right across the country and we do have a staff of estimators that try to keep this in line when a consultant is given a job. The regional offices also work with the consultants in developing a design and we have basically a 30 per cent check period, a 60 per cent check period and then we do a final check when all plans and specifications are finished to substantiate the estimate.

We also have a Treasury Board check on this, wherein we are generally allowed up to a 10 per cent variance from that estimate. If a building cost comes in over 10 per cent of what we said it should cost, we have to go to the Board for special approval, or we turn it back for restudy and redesign.

● 2045

Mr. Roy (Timmins): When you say you have a flexibility of 10 per cent, do you mean 10 per cent of your own cost figures or of the tendered cost figures?

Mr. Langford: If the tender price that comes in is on target or within 10 per cent over that mark, we are cleared to let a contract. If it exceeds the 10 per cent cost then we have two alternatives.

We can go back if we feel that there is a variance and we know where that variance is. If the mechanical section is unduly high and we can see it as a fault of design and not just of economics, then we can redesign that and get a rebid, actually.

If it is justified and there has just been an error in costing, then we have to get Treasury Board permission to let the contract.

Mr. Lalonde: The key to this, Mr. Chairman, is that you must realize that when we secure Treasury Board approval to call for tenders we must give them an estimated cost. The variation of the 10 per cent is based on the cost that we gave to Treasury Board.

Mr. Roy (Timmins): On your own figure; it is not that of the tendered price.

Mr. Lalonde: That is right.

Mr. Roy (Timmins): Do you lay out general specifications when you give a job to consultants?

Mr. Langford: Yes, the general specifications are what we call the project brief, and our own staff of professionals are involved in preparing this project brief, generally with the client department. If it is for the Post Office Department this project brief really embodies their requirement, and we stipulate the amount of space that is permissible, the general standard of the building and so on, and the consultant has to create a design. He has a fairly reasonable selection of materials, and what have you, and the design quality. This is many things; the quality of the lighting; the quality of the ventilation and heating systems, and so on, are generally spelled out in our project brief.

Mr. Roy (Timmins): By you, not the consultants.

Mr. Langford: That is right.

Mr. Roy (Timmins): Where the consultants are concerned, if the tendered price does exceed, for instance, the proposed figure submitted to the Treasury Board by a larger percentage than the 10 per cent, are the consultants allowed to substitute materials or design of lighting and heating and so on, or are they bound by the original general specifications that you laid out for them?

Mr. Langford: No; on this matter of exceeding our estimate, by our agreement with the consultant he knows that he has a legal obligation to redesign if he exceeds his estimate by more than 10 per cent.

Mr. Roy (Timmins): How tough are you with the consultants in the matter this redesign? Are you very strict or are you flexible?

Mr. Langford: No, we are becoming more and more strict because we are becoming more and more cost familiar. We have better estimating techniques established now. We have a cross-Canada network of costing and we have our own past job record, and so on. We are fairly sophisticated, in a sense, as far as cost breakdown is concerned. We have acquired on our own staff within the last three years people from the construction industry, for example, who are employed in the Department as estimators.

Mr. Lalonde: I can vouch for that, Mr. Roy, because I had some pretty bitter experiences at the beginning, as you well know, on estimating and bid prices. We really pitched in and I will say this for Mr. Langford: I think he has done an excellent job of setting up our estimating group. For the past year we have come pretty close, in all cases, to our estimated price.

Mr. Roy (Timmins): Do you have any relation, or do you co-operate, with the Canadian Institute of Quantity Surveyors in this costing?

• 2050

Mr. Langford: We have been using the quantity survey technique more extensively. One of the difficulties is that the quantity surveyor is not recognized as a professional in Canada. Most of the quantity surveyors come from other parts, normally the U.K. For example, two of our main estimators have quantity surveying degrees, but we call them estimators here, and most of the quantities are on estimates, not on the European system of brick by brick take off. Does that answer your question?

Mr. Roy (Timmins): Yes, thank you. With regard to giving the designing of buildings to consultants, do you do this regionally, speaking regionally of the architects in the region, or regionally as to the work of the region?

Mr. Langford: As a general policy we attempt to hire consultants within the area where the particular project is going to be developed. There are exceptions where, perhaps, there is not the skill for a particular type of project, but I would say almost without exception it is on a regional basis, with the exception of the National Capital area, where we hire consultants from across Canada.

Mr. Roy (Timmins): In conclusion, may I commend you for tightening up on the consultant contracts and express the wish that you will tighten up a little more.

Mr. Comeau: May I ask a supplementary?

The Chairman: A supplementary from Mr. Comeau.

Mr. Comeau: Do you consider recalling contracts? Suppose your consultants, say, "Well, this should be within a certain limit". You call tenders, and the quoted price is much

more than your consultants' price. Do you consider recalling contracts?

Mr. Langford: Yes, we do, and we have done so. This is basically the 10 per cent latitude that we utilize. As I say, our consultants are fully aware, when they enter into a contract with us, that they have this responsibility to meet an agreed on price.

Mr. Comeau: There are a certain number of cases where this has not been done, I would suspect.

Mr. Langford: That is true.

Mr. Comeau: I can think of one which is quite controversial, the National Arts Centre.

Mr. Langford: That is a very great area. Again, you cannot just pull a figure out of the air without knowing what all of the requirements are. This is one of the problems we have in Public Works. We are confronted with a request for a facility and we do not have all of the details that go into providing this facility.

This is what our project brief is. With the system of program planning we like to have all of the details of the requirements before we actually engage a consultant to do the designs. This is one of the reasons for our estimating becoming more factual. When we are just asked to build a building without knowing what the components are, or what the eventual size might be, we quite often have been asked to put a price on it, or, in fact, our client department gives us a price which is not accurate.

Mr. Lalonde: What has happened, Mr. Chairman, is that we have taken the estimate of a consultant and gone to Treasury Board to get approval to call for tenders and then the low price has come in at, let us say, 25 per cent or 30 per cent above the estimate made by the consultant. In that case we insist that he redesign at this own cost to meet the basic requirements on a different level, because it was his fault in that he told us that such a project designed that way would cost so much and in fact it was going to cost a lot more.

Mr. Langford: Mr. Chairman, I may say that this is a very complicated matter with the complex types of buildings with which we are involved, and we are moving very rapidly towards what is called a cost-control type of operation now; but this is very dependent on having all the information before you establish the estimate. It is just like wanting a

home, I suppose. You want everything in it, and you only have so many dollars. Quite often the figure has no relation to the requirements that you have.

• 2055

The Chairman: Mr. Harding, have you a supplementary? You are next on the regular list for questioning.

Mr. Harding: My question was in connection with contracts generally, but it can wait, if you like, Mr. Chairman.

The Chairman: I will let Mr. Hymmen ask his supplementary, and then give you ten minutes.

Mr. Hymmen: Mr. Chairman, I have what I think is a very short supplementary.

I think Mr. Lalonde mentioned the 10 per cent allowance factor. If the design comes in, a consultant is retained, and incorrect information is given by the department to your department, no matter what the cause, and the tender call is above the allowable amount, you have to go back to the consultant and call a re-tender. Is the consultant's fee based on the final job, or is it based on the initial job with other compensation for the changes required?

Mr. Lalonde: If the change is based on a change in requirements then evidently that is our own fault and so under his contract he is entitled to his percentage of the final cost of the requirement. But if there is no change in requirements and he is the one who made the mistake we insist that he redesign to bring the cost down, and then his percentage is on that last cost.

Mr. Langlois: The actual cost of the building?

Mr. Lalonde: That is right.

Mr. Langford: This is supplementary, and informative as well. We are currently trying to tighten up this 10 per cent latitude, because obviously it is a pretty wide margin in today's high cost of building. We are having a series of meetings with various professionals right now to negotiate an even tighter margin. In other words, we are aiming for the ultimate, that there will be no latitude. The contract agreement, with all of the facts known, shall be the cost factor that we are aiming at.

The system that we are working under is a rather difficult one to justify on a moral

basis, because the consultant is obliged to work harder to reduce his fee. I think this has been a professional way of doing things on an engineering and architectural basis for many years, but the Department is taking the initiative in negotiating the contract. All that the profession is asking is that we be more factual in our requirements, which we are now doing.

Mr. Hymmen: You have to have some allowance, but if the 10 per cent factor is there then it is almost sure that the bid will come in at that 10 per cent higher rate.

Mr. Langford: There is also the opposite fact, too, that we do not hear too much about the jobs that we bring in considerably below the estimates and this is only normal. We do not read too many newspaper stories about jobs that come in a great deal under the estimate. A classic would be the National Library and Archives building. It came in roughly 25 per cent under the agreed cost, and this was a result of tendering at the opportune time and on a low curve on contracting ability.

Mr. Hymmen: I have one other point, which I mentioned the other night. It is very important, and I think the Minister commented on it. If the tenders are called on a regional basis and you can watch your activity in these regions and call them at a time when there is not a great deal of building activity you are more liable to get a much better price than you would when the great demand is on.

Mr. Langford: That is correct.

Mr. Lalonde: The Construction Association does not agree with that, though. They like to have a steady flow.

Mr. Sulatycky: I have a supplementary, Mr. Chairman. Are the consultant's fees the same all across Canada—the percentage of the total contract?

• 2100

Mr. Langford: They are. We have a standard contract for the architectural profession. We are hopeful of establishing this in the engineering profession, but the fees are generally dictated by provincial associations. As I say, since 1959 we have had a universal fee system for architectural work, and this has been accepted by the profession. We are the leaders in this respect.

Mr. Whicher: Just this year it has gone up one per cent in Ontario. Do you pay that extra one per cent?

Mr. Langford: No. We have had strong representation to do this. We may, but we also want to be more precise about what we get for any adjustment in fees.

Mr. Lind: Suppose your contracts vary across Ontario. Say you have a contract for \$1 million, one for \$2 million, another for \$100,000, and another where you are getting down to \$50,000 and under. Is it the same architectural fee, or is it scaled up from a smaller...?

Mr. Langford: It is a graduating scale. It is such and such a per cent for the first \$2,000,000, it is a reduced fee for an additional \$1,000,000, and above \$3,000,000 it is a reduced fee again. So that generally the average that works out on an architectural building contract is in the range of 5.5 per cent. This is for a total contract which includes a preliminary design, final design, specifications and supervision.

Mr. Whicher: What about furnishings?

Mr. Langford: No.

Mr. Lind: One further question on this. Suppose you bring in a heating engineer. Is this additional to the architectural fees?

Mr. Langford: No. It is a team operation.

Mr. Lind: And electrical the same?

Mr. Langford: That is right. We generally involve a team of consultants with one contractual responsibility, but this includes structural, electrical and mechanical, plus the architectural.

Mr. Lind: Now, in the building of these, you call for tenders, suppose, today on a building, or you call for consultants to design a building. Many of these buildings, as I understand it, are designed perhaps five or ten years before they are actually finished. What happens if there are changes made in the meantime? Take the National Archives. Was it not designed about ten years before it was started?

Mr. Langford: That is correct.

Mr. Lind: Who is responsible for all the modern changes that go into that building?

Mr. Langford: If we knowingly change requirements because of improved technology

and so on, we pay additional fees for that improvement. This is not the rule, as you are probably aware; it is usually the exception. But definitely in the case of the Archives building, there were revisions and updatings. We had to pay additional fees for the work involved in that case.

Mr. Lind: Well, take the electrical for instance. Over the last ten years the increase in the maximum load that we need for the services coming into the building and the necessary increased wiring for floor after floor in a building the size of that must be quite fantastic.

Mr. Langford: It is, and it is tied in with general government policy. Ten years ago, as you are well aware, there was not the same demand for environmental conditioning. Now it is a policy to produce the same standard of space that is generally available on the market, and this involves additional design and additional loads and additional costs. But we do take this into account.

Mr. Lind: Going back to the Archives Building, are you satisfied that you got good value for your money in the final construction?

Mr. Langford: Well, in that particular case we got extremely good value, yes. As I say the estimates were established, and the actual final cost of the contracts was several millions of dollars less than what we anticipated having to pay for that.

Mr. Lind: If you had to call the contracts in 1967 instead of 1963, would you have paid a lot more?

• 2105

Mr. Langford: Oh yes. This is again a factor that makes estimating very difficult. We have no control over negotiations that go on between the construction contractors and their subtrades, but we have to try and be knowledgeable about the sequence of renewed contracts. Obviously this is part of making a vast error in estimating. If you do not know four years in advance what the labour rates are going to be, you can be out 10 per cent very quickly, as you can well imagine.

Mr. Lind: One more question.

The Chairman: Mr. Lind, I am going to have to call you off here pretty soon.

Mr. Lind: Suppose there is a difference of opinion between your contractors and the firm of consultants that you originally hired. Does the Department bring in a separate consultant to look after its interests, so that we are assured that the people of Canada are not over-paying for the extras in these buildings?

Mr. Langford: No. That is why we have a fairly large component of professionals within the Department, and this particular kind of deliberation as between the Department and the consultant generally.

Mr. Lind: Thank you, Mr. Chairman.

The Chairman: Mr. Harding, you were waiting and I think you had a supplementary question. So I think we should allow you that supplementary before you start your ten minutes.

Mr. Harding: It is quite all right, Mr. Chairman. This is a very interesting line of questioning, and I think it is something that we are all very interested in.

I would like to get back to this contract set-up. Now, we have some additional material there on contracts. Does it include the estimate by the Department, the bid prices and the final cost of the project?

Mr. Langford: This material that we have tabled tonight?

Mr. Harding: Yes.

Mr. Langford: No, the material that was tabled tonight is a list of the bidders and a low bid.

Mr. Harding: I would be very interested in having the Committee study some of the contracts with the project briefs or the estimates by the Department, and then having a look at the bid price and the final price.

I found out over the years that quite frequently some very grave errors are made by the various departments in their estimates. I am not too well acquainted with the construction business, but in the field of road construction I know that in many instances out in British Columbia there have been fantastic differences in the estimate, the bid price and the final price because of faulty estimating by the departments concerned. What do you do if you find that there is a great variance between your estimated price and the final cost price of the project?

Mr. Langford: This is a different type of estimating for this kind of work, and it is generally based on soils tests, soils analysis, and a guess at the kinds of material that you might encounter. This is a very, very difficult area of estimating because it is largely based on judgment. In highways work, and I am out of my field, it is generally set up on a unit price basis.

Mr. Harding: I understand this.

Mr. Langford: And if you run into unknown circumstances once you start your excavation or moving, there is very little you can do but to negotiate on an established range.

• 2110

Mr. Harding: Has the Department ever found on road construction jobs that perhaps the preliminary investigation—and I think that is about all you call it—by the Department has been inadequate? I will just give you an example. You are going to push a road through, and you estimate there are so many cubic yards of rock, so many cubic yards of dirt to be moved and, of course, the unit price for rock is very much higher than the unit price for dirt. When a person bids on a contract of this kind, there could be a vast discrepancy. But if there is too much discrepancy, it would lead me to believe that perhaps there have been insufficient preliminary checks by the engineers concerned.

Mr. Lalonde: Mr. Chairman, we have with us our expert on road construction, Mr. Binks, who is an engineer. Perhaps he might give you some explanation.

Mr. Harding: I would be very happy to have that.

Mr. W. R. Binks (Chief Civil Engineering Programmes, Department of Public Works): Sometimes there is what you might say inadequate preliminary investigation but, when you are engineering a road, you have to determine how much money you want to spend for engineering. For instance, you are coming to a large cut, you do not know the rock levels, it would cost thousands and thousands of dollars to do borings say, at every 25 or 50 feet; so, as Mr. Langford said, the engineer has to use judgment in his estimating. In other words, you could spend almost as much in engineering as you could for the cost of the job if you wanted to get precise information.

However, our contract covers that to a certain extent. When quantities overrun or underrun by a certain amount then you negotiate with the contractor.

Mr. Harding: Yes, I understand the procedure. The point I am making is that unless we have a reasonably accurate estimate of the amount of work to be done the Department could be out a great deal of money. I can give you one example. I was in the B.C. legislature for a period. There was one particular contract which we had checked into. There were seven bidders and, of course, the low bidder gets it. The low bidder had bid a relatively low price on soil and an extremely high price on rock. It turned out that there was a fantastic amount of rock. Actually, if they had had a fairly accurate estimate of the cost, the low bidder would have been the high bidder, but he got the contract.

Mr. Binks: That is right, that can happen. It might be what we consider an unbalanced bid. But still under our contract we are covered because we negotiate once one quantity goes up or down a certain percentage above the estimated quantity. I think you are likely talking of a few years ago.

Mr. Harding: Would you just repeat that again?

Mr. Binks: In our tender we have an estimated quantity—so many yards of rock and so many yards of common—and if during the course of construction either one of those quantities go up above a certain amount or down below a certain amount then we can negotiate with the contractor for new unit prices. If we cannot agree with the contractor then we can go to a cost basis for that work.

Mr. Harding: I see.

Mr. Binks: I do not think that was in the B.C. contracts at the time that you are likely talking about. I am not sure if it is now or not.

Mr. Harding: Mind you, this is just one example but it shows you what can happen. I think maybe in this particular instance the Department was pushed and maybe just did not have the time to do a proper job of estimating.

Mr. Binks: That is quite right, Mr. Harding. We may be off on the estimate for a highway or even a marine works because of unknown conditions, but I think we seldom do not get

value for the money we spend on that particular road because of the way the contract is passed with the contractor.

Mr. Harding: Thank you very much for this information. It is interesting and I must say rather re-assuring.

• 2115

There are one or two more points I would like to raise, Mr. Chairman, if I may. At the last meeting Mr. Gilbert raised a question which I think a number of the members here misunderstood. He had suggested the possibility of setting up a Crown corporation. He was just probing about and I think it was a matter of trying to get some type of costs. It was not that we have not had examples of this type before. I can take you back to Saskatchewan. I think one of the members suggested that it had not worked in Saskatchewan. I understand that there in the construction business the government a number of years ago set up three or four construction crews in the province. They were Crown corporations, they had up-to-date machinery and they would take a job here and a job there. They were not doing all the jobs, but the point was to get an idea of the approximate cost of moving dirt, blasting rock and so on. Then when bids came in the government at least was in a position to know whether a bid was completely out of line, whether they should do a little bit more investigation, or whether they should recall it and put it out to tender again. I understand that this is still working, that these project crews are still going and are used as a kind of guideline. Mind you, they do construction work on a rather small scale, they still do it and they provide a barometer on what the cost should be. Then the government could line up somewhere within that low cost and the high cost of a project within a percentage point.

Mr. Lalonde: I would have to rely on Mr. Langford's judgment. He used to be Deputy Minister of Public Works for Saskatchewan.

Mr. Harding: That is very interesting to hear. But Mr. Gilbert had suggested that perhaps something like this might be set up in the construction field to gauge costs. It was just a thought and I think it would be well worth looking into. It is not a matter of trying to do away with free enterprise in the construction industry. Mr. Gilbert put it out

just as a feeler to see what the Committee thought about it.

Mr. Roy (Timmins): Mr. Chairman, may I ask a supplementary.

The Chairman: Yes, Mr. Roy.

Mr. Roy (Timmins): Mr. Chairman, I wonder if the officials of the Public Works Department would tell us if their Department is so inefficient that they cannot, as this gentleman suggests, predict the cost of a road job. I just cannot get over the statements that keep coming out of the Department. It is just as if the officials of the Department of Public Works do not know what they are doing, that they need to organize a complete construction firm just to find out what a shovel foot of dirt to be removed costs.

Mr. Harding: Mr. Chairman, just half a moment now. That suggestion was not made by Mr. Gilbert and it was not made by me.

Mr. Roy (Timmins): You made it.

Mr. Harding: I never made it.

Mr. Roy (Timmins): You just made it again.

Mr. Harding: I never made it. It has nothing to do with the judgment of the officials in the Department of Public Works. I think Mr. Gilbert made a very valid suggestion and there is nothing wrong with the Committee discussing it. We have had several members question the costs of building the National Arts Centre and we have had several other constructions of various buildings that we think have gone completely out of sight. Do you mean to say that quizzing the cost of these structures is questioning the integrity of the departmental officials? This is not so.

Mr. Roy (Timmins): Mr. Chairman, I say that establishing a construction firm just to establish a cost system in the Department is questioning the integrity of the Department.

Mr. Harding: That is your point of view.

Mr. Roy (Timmins): Then the other is yours.

The Chairman: Gentlemen, I would ask that you please address the Chair.

Mr. Deakon: Mr. Chairman, I would like to ask the witnesses a couple of simple questions. Does the Department aware any cost-plus contracts now?

Mr. Lalonde: Very seldom.

Mr. Deakon: In other words, most of the contracts are lump sum contracts on tender.

• 2120

Mr. Lalonde: It would have to be under very special circumstances or a reason—where the requirements are not known and...

Mr. Deakon: And very difficulty to ascertain.

Mr. Lalonde: ...are difficult to ascertain. Otherwise, the system is based on the public tender.

Mr. Deakon: I also wanted to ask the gentleman who is the roads expert here a question.

I was just looking at this Trans Canada Summary and I notice there is a breakdown of the allotments to the various provinces. who sets these allotments to the provinces?

Mr. Binks: Mr. Chairman, when we set up the Estimates we have an estimate from our regions of what each province will likely require. When we set out an amount in the Blue Book it is not allocated to provinces. That is what has actually happened, in the report you are looking at but the Blue Book does not set out an allocation to provinces, although we primarily base our estimate on what we figure each province will likely require during the coming year.

Mr. Deakon: I notice, Mr. Chairman, and I am referring to page 13 of the Report of the Proceedings under the Trans-Canada Highway Act, that in the bottom table it shows the total commitments approved and I would like you to just look at the two big provinces of Quebec and Ontario. Are those the commitments that you are aware of before you set the pattern that the federal government is going to be responsible for?

Mr. Binks: Mr. Chairman, when the province requests approval to award a contract, and the federal government approves that award, it then becomes a federal government commitment. The next column is Canada's estimated share of that commitment. This is not future commitments; this is on work approved.

Mr. Deakon: Who sets the proportion of cost which the federal government has to pay?

Mr. Binks: To each province?

Mr. Deakon: That is right.

Mr. Binks: The agreement just says that the federal government will share in the work done to construct the Trans-Canada Highway. There is no allotment to any province in the agreement. There is an over-all appropriation by the legislation, a maximum amount that the federal government may contribute to the cost of the Trans-Canada Highway. It is not allocated to any one province for any amount.

Mr. Deakon: Is the percentage or share that the federal government will be paying the same for each province or is there a different percentage for the different provinces?

Mr. Binks: No. The original agreement was that Canada would pay 50 per cent of the cost of construction. In 1956, because of the slow progress that was being made on the highway, a new agreement was entered into with the provinces which said that the federal government would pay 90 per cent of the cost of construction on 10 per cent of the mileage within each province and 50 per cent of the cost of construction on the remainder of the mileage. In 1963, I think it was, a new agreement was entered into with the Atlantic provinces in which the federal government paid 90 per cent of all construction costs.

Mr. Deakon: I am referring again to the two provinces in the lower table on page 13. I am referring to the Province of Quebec and the Province of Ontario. The total commitment approved for the province of Quebec for this particular period is shown as \$234 million and some odd dollars and Canada's share of that was \$172 million. The total commitments approved for Ontario were greater than they were in Quebec, namely, \$242 million, and Canada's share of that particular amount was \$134 million. So, the percentage appears to be a little different.

Mr. Binks: It is not the percentage that is different, Mr. Chairman. Quebec did not enter into the agreement until 1960 and they concentrated on the section of highway on which they received a 90 per cent federal contribution. This really came to the fore just prior to Expo when they were building through Montreal, and that was their 90 per cent section. In other words, they got 90 per cent of the cost for an equivalent two lane highway through the Montreal section. Most of their work in the remaining two years will be on a

50 per cent contribution, which will bring this more in line.

• 2125

Mr. Harding: I have a supplementary, Mr. Chairman. Is the province able to pick its 10 per cent?

Mr. Binks: It was mutually picked. It was designated by the province but it had to be approved by the federal government.

Mr. Harding: I see. And naturally they picked the tough going.

Mr. Binks: In 1956 there were certain physical gaps in the highway. For instance, in Newfoundland there was no road—I just forget the particular area—and they had to select their 10 per cent within that area to close the physical gap. In British Columbia they had to select part of their 10 per cent mileage through the Rogers Pass area because we considered that to be a physical gap. I think the rest of it was some place in the Fraser Canyon.

Mr. Harding: That was pretty tough going, too.

Mr. Binks: It was very tough going.

Mr. Harding: And expensive.

Mr. Binks: Very expensive.

The Chairman: Gentlemen, I am going to have to remind you of some of the rules that were laid down here because I notice that some of the supplementary questioning is running as long as the regular questioning. I think if you have several questions like that to put that possibly you should request a special line of questioning rather than a continuous supplementary.

Mr. Deakon: But you gave me the floor to keep on questioning. I did not have any supplementary questions.

The Chairman: No, I have Mr. Chappell, Mr. Orange, Mr. Comeau and Mr. Lind, waiting on my list.

Mr. Deakon: But I have not spoken yet. This is the first time.

The Chairman: I was not given your name. If you wish to be recorded I will put your name down. I am just trying to cut back on the supplementaries and get them into order.

Mr. Lalonde: Before the next question is put, I think there is one thing on which I must not leave the wrong impression. The figures that you have in the Blue Book for all of the projects are not the estimated costs. These projects are sometimes listed two years ahead of time and we have to make a guess—and that is all these things are, guestimates—as to approximately how much money the project will cost and how long it will take to complete. The figures that you have here are not estimates for any project.

The Chairman: Gentlemen, Mr. Chappell is next then Mr. Orange, Mr. Comeau, Mr. Lind and Mr. Sulatycky. Is there anyone else? Mr. Deakon.

Mr. Chappell: I will pass, Mr. Chairman

The Chairman: Mr. Orange.

Mr. Orange: Mr. Chairman, once again I seem to have a series of unrelated questions. Just to go back to the highways for a moment, I see in your annual report that the Department has the responsibility for the construction of roads in national parks. How did this arrangement come about, Mr. Chairman? I wonder if Mr. Lalonde could tell us something in that respect. Also, is it all national parks or is it just those parks which seem to warrant road construction as such?

Mr. Lalonde: Mr. Chairman, in 1954 the Development Engineering Branch was formed in the Department of Public Works primarily for two purposes. First, to handle the Trans-Canada Highway agreements with the provinces and, second, to act as a service agency for the construction of roads. In that role we carry out major construction for the National Parks Branch.

Mr. Orange: At their request?

Mr. Binks: Primarily at their request but ...

Mr. Orange: Who supplies the money?

Mr. Binks: They supply the money. It is the same in the Northwest Territories and the Yukon.

Mr. Orange: Yes, I am aware of that. I was just curious to find out if it was the responsibility of the Department to not only carry out the construction but also to do the planning and provide the funds.

Mr. Binks: No. They tell us where they want the road and we do the engineering and they furnish the funds.

Mr. Orange: This is on another subject, Mr. Chairman. When you are doing construction work on behalf of other departments, be it renovations or new construction, is it the policy of the Department to accept the recommendation of the other department with respect to location or do you try to go beyond that and involve community opinion?

• 2130

Mr. Lalonde: Mr. Chairman, we are presumed to be better judges of the suitability of a location for a certain type of building but in the case of the post office department, for instance, if they say they want a post office in a certain area we have to accept their judgment. We are not a control agency but if there were a major difference of opinion between our client and ourselves we have an arrangement whereby we go to the Treasury Board and we give our advice. They either take it or they do not.

Mr. Orange: To be specific and leading up to this particular question, I understand that arrangements have finally been made with the Department of Justice for courtroom renovations in Hay River.

Mr. Deakon: Where is that?

Mr. Orange: It is in God's country, and that there is some discussion in the town by the municipal council with regard to where the facility should be located. I understand that you are going to use the old liquor store which is on Bell Island. This is to be used; the Department is undertaking the renovations. Representations were made to me today asking why it is being done here rather than on the new site which is across the river from the old town.

Mr. Lalonde: I am not aware of that.

Mr. Orange: No, I am just really interested in whose responsibility it is.

Mr. Lalonde: To give you a related example, for instance, at one point the Exchequer Court wanted some space in Montreal. We could have provided space for them in a number of places but they said: "No, we want to be near the court house", and we had to provide space near the courthouse and I think it was justifiably their decision to make.

Mr. Orange: As I say, in this particular instance—and this is really the question—I know the customer department will have cer-

tain requests, or ideas about where they want these things, but does the responsibility fall on you or on the Department for whom you are acting to determine location, community sentiment and all of the other things?

Mr. Lalonde: Mr. Chairman, what we consider to be a serious objection to a request by a client, we first attempt to persuade him that this is a bad location or that it will not lend itself to a good construction, but we are not a control agency and therefore we do not have the final word.

Mr. Orange: I would like to come back to the south. As I pass the Jackson Building here I see it is undergoing complete renovations. Mr. Chairman, I was not at the last meeting and if this subject has been discussed I do not mind being told. The old Jackson Building has been in existence, I believe, since about 1929. During the war, as I recall, there was an addition to it which, at that stage, was equal to the cost of the original construction. Then in 1958 there was a small explosion here in town and it suffered extensive damage. Substantial renovations to the building were undertaken at that time, and I see that renovations are under way once again.

I really have two questions. In another 10 or 15 years, will another substantial amount of money have to be spent on it, or maybe this building should be sold or should have been torn down. Would it have been torn down. Would it have been possible to put up one of your utility buildings on that particular site? I see you have \$3 million or \$4 million for this program.

Mr. Lalonde: No, Mr. Chairman, it is \$2.5 million.

Mr. Orange: That is the total cost?

Mr. Lalonde: Yes.

Mr. Orange: This is my first question: Is it an economic venture?

Mr. Lalonde: Mr. Chairman, that is one I am prepared to discuss because I struggled with it for about a year. We needed the space in a hurry and we had two possibilities, keeping in mind that the Income Tax District Office has been there for some time and it is known to be in that location and, therefore, is very practical for those who have to go to the income tax office.

We could have built another building elsewhere because there really was no land readily available at a reasonable price downtown and we could have sold the Jackson Building, but we figured that anybody buying the Jackson Building and renovating it would have to lease it back to us, otherwise it was a very bad buy. First of all, we surveyed the condition of the building. The foundation and the structure are in first-class shape. That building was renovated, as you know, after the explosion but it is in good shape.

• 2135

The inside of the building is not functional at all. It was built a long time ago. To make it functional we would have to rebuild the inside, just as we rebuilt the inside of this building, and put in new electrical and mechanical equipment. We estimated what the cost would be, and we decided that if we could bring in the total cost within a certain amount we would amortize the cost for the number of square feet that we would use in that building at a much lower price than the rental rate which we would have to pay if we were to lease elsewhere downtown, or if we were to sell the building and then have to lease it from an entrepreneur.

And at the moment, the low tender that we have to renovate all of the inside of the building,—and, mind you, to keep the District Income Tax Office in operation during the period of renovation in that place—is going to bring the equivalent of the amortized rental rate to \$3.91 per square foot per annum, and any rental below \$4.25 downtown is a very cheap rate. Therefore, we figure we are saving quite a bit of money by doing what we are doing and we think, with the building modernized, we will be able to use it for at least 25 years.

Mr. Orange: I have another question. When the explosion took place who was responsible? Did the gas company...

Mr. Lalonde: The insurance paid for the renovation.

Mr. Orange: So really we can ignore that in terms of cost to government.

Mr. Lalonde: It did not cost the government anything; it did not change the inside of the building, though. This time, with air conditioning and a new electrical system, we are going to be able to use all of it. Previously there were open spaces because the services

are at each corner and you do not see any more buildings built that way.

Mr. Orange: Mr. Chairman, I have other questions I can catch on another round.

Mr. Comeau: Mr. Chairman, I have one question that follows a question I asked at the first meeting. It has to do with the inviting of tenders, and so on, that we discussed. You said that for projects between \$5,000 and \$15,000 you invite tenders. Is this correct? I had a question on the Order Paper some time ago asking for the number of contracts awarded to one particular contractor in my constituency since 1964—this is just an example—and I was told that this particular contractor had received 110 contracts since 1964. Since then another contract has been awarded and the same contractor again has received the contract.

I see in your Supplementary Estimates, which were tabled a month ago, that particular job is estimated at \$75,000. The contract was awarded a couple a months ago—in November actually—for \$58,000, and yet when it was tabled about a month ago is was estimated at \$75,000.

To me, if you estimated \$75,000 it seems there might have been another contractor. I am really wondering whether you do not feel that there has been some favoritism in some parts of Canada.

Mr. Lalonde: Mr. Chairman, before I reply to that part of the question may I ask Mr. Comeau where he is getting that \$75,000 estimate from?

Mr. Comeau: From the Supplementary Estimates.

Mr. Lalonde: I have just said that what you see in the Blue Books, or listed in the estimates, is not an estimate.

Mr. Comeau: It is a guess; right.

• 2140

Mr. Lalonde: All we are doing there is making sure that we have enough money to cover that particular contract because if you will recall, any time a member asks a question about a bid that we are going to have soon we say we cannot disclose what our estimate is because then we would never have a bid that would come under our estimate. It would be telling the contractor to bid at least this high, and this is not a true basis of comparison.

Mr. Comeau: What I am trying to get at—and I am not making my point very well. That is probably because I am a Frenchman, but anyway—when were these last supplementary estimates prepared for the Department?

Mr. Lalonde: They would have been put forward by the region perhaps a year and a half ago, but not judged to have sufficient priority at the time the main estimates were prepared.

Mr. Comeau: These were just tabled about a month or two ago. Is that not right?

Mr. Lalonde: That does not matter.

Mr. Langlois: They were prepared before.

Mr. Lalonde: That does not matter. All we put in there is an amount of money which we figure is going to be sufficient to cover the contract. We do not analyse what the cost will be in order to put it in the estimate. We purposely stay away from that because otherwise when we asked for a bid on any project it would not be secret.

Mr. Orange: Are there not other costs involved as well as the cost of the contract?

Mr. Lalonde: Yes.

Mr. Orange: I think this is the point.

Mr. Lalonde: Yes, this is the cost of the whole project. There are all types of other things such as land, consultants, and that is why I gave the Committee this caveat; because any contractor trying to use this would be off base all the time.

Mr. Comeau: That might answer my question. I saw this about a month ago, after Christmas. This was for \$75,000 and the contract was awarded for \$58,000 before Christmas. It was probably because of that.

Mr. Lalonde: The other part of your question, Mr. Chairman, relates to a condition of which I am not personally aware, but I have been told that this may be in an area where there are not too many good contractors and that fellow is the best.

If you look at the answer that was tabled, everything above \$1,000 was on a public bid. He was the low tenderer. Evidently he has a sharper pencil than anyone else in that area.

Mr. Comeau: I will not dispute that without getting into politics but I could argue.

Mr. Lalonde: I assure you that that was not one of our considerations.

The Chairman: Mr. Roy.

Mr. Roy (Timmins): I have a supplementary, Mr. Chairman. How can we possibly make a charge of favouritism in this Committee without having the facts and comparable bid and tenders on the job?

Mr. Comeau: I am just suggesting; I am not really charging.

Mr. Roy (Timmins): How can we be so irresponsible and loose with our charges?

Mr. Comeau: I am just saying that the facts that I have indicate that this contractor was awarded 110 contracts and that I am sure there are other contractors in that area. I am wondering if they have been invited; that is all. But I do not want to go into that. It would be playing politics.

Mr. Roy (Timmins): Mr. Chairman, has the gentleman compared the bids and tenders or is he just basing his statements on the fact that a contractor is getting a large number of contracts? If anyone is playing politics this is playing politics. Let us have the facts.

The Chairman: I think Mr. Lalonde cleared up that point when he said that this man had the low bids and the sharper pencil. He might like to reiterate that to clarify this point.

• 2145

Mr. Comeau: I am satisfied, Mr. Chairman.

Mr. Lalonde: That was part of the answer which was tabled in the House. We listed all of the contracts and where public tenders were advertised in the papers there were at least three tenders invited.

The only time there is no tender is in case of emergency such as to repair a wharf for \$100 or \$200—that type of thing. You will recall that the greatest number of contracts awarded resulted from tenders.

Mr. Comeau: I am satisfied with the answer, Mr. Chairman. I have another question. What is your policy with regard to providing harbour facilities where a business exists—fish plant or a boat builder or this sort of thing? Do you take into consideration that a fish plant exists and may need a wharf for its fleet and so on?

Mr. Lalonde: Mr. Chairman, you have to make a distinction here. Where a wharf is used exclusively by let us say a fish plant and the company operating the plant comes to us and says, "We want you to build a wharf here" we will consider that application but under certain conditions such as a shared cost with the owner of the plant or else a deferred payment operation where we can help increase the commercial activity, but the taxpayer does not pay to enable this man to make a greater profit or to operate his business. Where there is a fish plant operated jointly with a public wharf, the wharf is built out of public funds and there will be cases where the owner benefits from the use of the wharf but he pays wharfage for whatever use the makes of it.

Mr. Comeau: Do you try to co-ordinate your marine facilities with existing industries in the area?

Mr. Lalonde: If it is feasible, yes, but it is not always feasible. For instance, you may find that there is a wharf already built and that somebody wants to open a plant half a mile away or a mile away. It seems to us that there is no justification for building two wharves just to prevent the fellow from using the one that is already there.

Mr. Comeau: Another question, Mr. Chairman. Is the Trans-Canada Highway completed all across Canada?

Mr. Lalonde: No, it is not, Mr. Chairman.

Mr. Comeau: Up to now Canada's share has been \$785 million. Is that right? That is what it says here. In 1966 you authorized that the maximum federal contribution be raised to \$825 million. Do you expect it to go above this or do you feel that this will complete the highway?

Mr. Lalonde: At this time. Mr. Chairman, we are working on that maximum amount, which is statutory as far as we are concerned. Whether or not it will be possible to complete the highway 100 per cent within that figure I cannot say.

Mr. Comeau: Are these funds different from the funds used under ADB to build highways? Is this a different type of thing?

Mr. Binks: It is under a different vote, Mr. Chairman, if that is what you mean.

Mr. Comeau: Yes, that is what I meant. It is separate. And the ADB highway project...

Mr. Binks: That comes out of separate funds from the Trans-Canada Highway.

The Chairman: Your time is up, Mr. Comeau, if you would like to round out your questioning.

Mr. Comeau: What are the criteria for deciding whether you build or you rent? At the moment you are building post offices across the country. In some areas you rent RCMP buildings, for example. How do you make these decisions?

• 2150

Mr. Lalonde: That is pretty difficult to explain in a short sentence. Mr. Chairman, There are a number of factors: first, the availability of funds for Crown construction; secondly the availability of leased accommodation on the market; thirdly, the availability of entrepreneurs capable of building a building under the build-lease plan. We really have to analyze each situation as it occurs. I do not think that you could lay down a policy to the effect that in specific instances you will always lease or you will always build. That is impossible. The only real policy that we try to follow, maybe not always as successfully as we would like to, is to maintain a proper balance between the amount of Crown-owned buildings and leased accommodation.

Mr. Comeau: This might be the reason for your having in the same town, for example, a post office which is owned and an RCMP building which is leased?

Mr. Lalonde: It may incorporate one or more of the factors I have mentioned. When we lease we commit ourselves to 10 or 15 years' budgeting for the total amount of rental that we have to pay, and this can become dangerous unless we have that balance. If we have leased too much we might find ourselves in the position that we do not have the funds to build and yet we are at the mercy of the landlord when it comes time for renewal of the lease.

Mr. Sulatycky: I have a supplementary question, Mr. Chairman.

The Chairman: Yes.

Mr. Sulatycky: Could you table at the next meeting, or whenever it is possible for you to do so, a list of the leased post office premises in Alberta?

Mr. Lalonde: Certainly, Mr. Chairman.

The Chairman: Mr. Lind?

Mr. Lind: I would like to go back and ask some questions and make a few general observations on the Trans-Canada Highway, more or less relative to specifications, Mr. Lalonde. First of all, what safety factor do you build into your bridges for future expansion? I see you have a specification of 18,000 pounds per axle load. We may have to carry 24,000 pounds per axle load. What safety factor is there in our bridge construction? I merely want a guesstimate here, but I am interested in finding out.

Mr. Binks: I am not a bridge designer myself, Mr. Chairman, but bridges are designed to a specific loading. In the Trans-Canada Highway Agreement it is called H20-S16 which, in total, is about a 72,000 pound gross load. There is a tremendous safety factor there. I would have to get some information from our designers to give you what the overload might be.

Mr. Langford: Generally, in the construction codes that are used, if you consider complete demolishing, or failure, there is a general 400 per cent safety factor in the design for beams. There are variances on this, but if you want an approximation I think this is it.

Mr. Lind: But you have enough built in not only in bridges but in roads to take care of our spring thaw factor? . . . Probably the Trans-Canada Highway is not restricted to half-loads during certain months of the year, but many highways that are not up to standard construction are so restricted during those soft periods of thawing. You have a safety factor built in to take care of that?

Mr. Binks: On the road proper; not the bridges.

• 2155

Mr. Lind: I am talking about the road proper. I have left the bridges.

Mr. Binks: There are two ways of designing a road, that is, for all-year-round traffic or for spring loading restrictions. Most of the roads today in I think all of the provinces are built on the year-round standard, expect possibly some of the very minor roads. But all the arterial highways and freeways are built for year-round loads.

Mr. Lind: When you get into road construction and you have let a tender to a private individual he is naturally interested in making money on the job, or he would not bid it, and you are interested in getting it done as cheaply as possible. What happens in bridge construction when you have done your borings and have not picked up perhaps a rock fault, or quicksand, or different soil conditions, or different rock conditions, or hit shale where you expected solid rock? What is the general procedure in such a case to come up with a fair deal for both the contractor and the Department.

Mr. Binks: If it cannot be covered under the unit prices of the contract, Mr. Chairman, because there is a difference in soil conditions, and so on, and it is obvious to both parties, they first of all try to negotiate a reasonable price. If they cannot do that there is a provision in the contract that it can be done at the contractor's cost—and I think there is plus ten per cent in there, if I am not mistaken. Therefore, you keep track of his costs during that particular operation and you pay him on his cost.

Mr. Lind: I have one further supplementary question, Mr. Chairman. There is no doubt that 99 per cent of our contractors are free enterprisers who are interested in making a profit and have to pay taxes back to the federal government, in which case there is business rolling in and out, but what happens when this fellow is losing money on a contract? How rigid are we? There is no unhappier contractor in the world than the one who is losing thousands of dollars a day on a contract. Some people think it is great to see the contractor lose money, but I do not. There has to be fair play; it has to be a two-way street. What is the procedure there, Mr. Lalonde?

Mr. Lalonde: Mr. Chairman, the basis on which we deal with that kind of case is not whether or not the contractor is losing money. That would be a difficult thing to ascertain. We cannot audit his books and find out how much he has taken for overhead, and so on. We have always had a policy whereby we like to see the contractor finish his contract on time and then we entertain and negotiate on claims—and we get claims quite often.

Up until now we have used as a basis of settlement the negotiation method. We have seldom had a case go all the way to the

Exchequer Court of Canada. It has imposed quite a heavy load on our experts because they have to be partly judges and partly advocates on behalf of the government.

I have been trying to set up in our procedure an arbitration system. This would not necessarily be legally binding, because, as you know, the Exchequer Court is the only court where the federal government can be bound legally. But we are making a great deal of progress in discussing that possibility with the Canadian Construction Association and with the Treasury Board Committee on Contracts.

I am hoping that some procedure can evolve whereby there will be semi-judicial arbitration where the contractor will present his case, we will give our opinion and somebody else will decide.

• 2200

Mr. Lind: I have one further question relative to your contracts. Suppose you want a building finished by January 1970. Do you ever set a time limit in your contract and say, "If this contract is not finished by that date you will pay a penalty of so many dollars per day thereafter"? Or if he is so many days under do you give him a bonus for that?

Mr. Lalonde: We have done this, Mr. Chairman, in some contracts where the date was all-important, but normally we do not do that.

Mr. Lind: You stay away from that. Has it worked satisfactorily?

Mr. Lalonde: That is difficult to say. We were trying to do this when we called for the first tender on the Northumberland crossing and it really was a shock to us. So it can work both ways.

Mr. Lind: Thank you.

The Chairman: Gentlemen, I believe our two hours are up. I just received notice that the House might possibly sit until 12 o'clock tonight. I wanted to clarify one thing before we adjourn. On the matter of supplementary questions, what I am really trying to do is keep them within bounds in a comparative way with the regular line of questioning. In Mr. Deakon's case, I thought he was on on a supplementary and I assume he thought he was on in the regular round. I hope you do not mind if I cut you off at three or four supplementaries, otherwise we get bogged down and many people who have a straight line of questioning do not get it finished. If you do have several questions I think it would be better if we put them on a regular 10-minute period. From time to time during the meeting I will read off the list of names that I have here. If you are missed on that list be sure to indicate so that I will see you. I am trying to be fair with everyone in that respect.

I would like to thank the officials for appearing today. I believe our next meeting will be Tuesday morning.

The meeting is adjourned.

APPENDIX D

Answer to question by Mr. Paproski, M.P.

1968-1969 PROJECTS AND NAME OF CONSULTANTS

QUEBEC

Cite de Jacques Cartier—Public Building—Additions and Alterations, T.C.—Larose, Laliberte, Petrucci.

Coaticook — Public Building — Boulanger, Faucher and Gagnon.

Hauterive—Public Building, T.C.—Parent Moranville.

Hull—Printing Bureau Building Alterations, T.C.—Belasky, Renaud and Associates.

Hull—Purchase of and alts. to Bldg. P.S.C. Language Bureau—Langlois and St. Denis.

Montreal—National Film Board Bldgs. etc.—Beaulieu, Lambert and Tremblay.

Montreal—National Revenue Building Improvements—T. Pringle and Son.

Montreal—Postal Terminal Improvements—Chagnon and Ratelle.

New Richmond—Public Building, T.C.—Albert Leclerc.

Pierreville—Public Building—Rene Thibault.

Ste Agathe des Monts—Public Building—Clément, Lévesque and Mercier.

Ste Foy—Public Building—Paul Samson.

Ste. Therese de Blainville—Public Building, T.C.—Labelle, Labelle, Marchand, Geoffroy.

Valleyfield—Public Building, T.C.—Pierre Dionne.

Victoriaville—Public Building—Blais and Malouin.

MANITOBA

Winnipeg—National Revenue Building Alterations, Additions and Improvements, T.C.—Moody, Moore and Partners.

Winnipeg—Unemployment Insurance Commission Building, Improvements—Smith, Carter, Searle.

SASKATCHEWAN

Esterhazy—Public Building, to complete—Reid, Crowther and Partners.

Moose Jaw—Public Building—Improvements—D. H. Stock

ALBERTA

Red Deer—Public Building—Alterations and Improvements—Stevenson, Raines, Barrett, Hutton, Seton and Partners.

Wetaskiwin—Public Building—Bittorf and Wensley.

BRITISH COLUMBIA

Cranbrook—Public Building—Cimco Engineering.

Kelowna—Public Building—McCarter, Narine and Partners.

Nelson—Public Building—Tottrup and Associates.

New Westminster—Federal Building—Alterations to complete—Reid, Crowther and Partners.

Pentiction — Public Building — Improvements—Tottrup and Associates.

Terrace—Public Building—Additions and Alterations—Cimco Engineering.

Trail—Public Building—Improvements—Reid, Crowther and Partners.

Vancouver—Customs House—Alterations and Improvements—Park and Djwa Eng. Co.

Vancouver—Federal Building—Alterations, Improvements—Tottrup and Associates.

Vancouver — Postal Terminal — Improvements—D. W. Thomson and Co. Ltd

NOVA SCOTIA

Amherst—Public Building—C. A. Fowler—Bauld and Mitchell.

Antigonish—Public Building, T.C.—J. P. Dumaresq and Assoc.

Bridgewater—Public Building—Duffus, Romans, Kundzins and Rounsfall.

Canso—Public Building, T.C.—Robert J. Flinn.

Halifax—Sir John Thompson Building—Improvements—Webber, Harrington, Weld.

Middleton—Public Building—Additions and Alterations—T.C.—A. Avramovitch.

OTTAWA

Building for Department of External Affairs—Webb, Zerafa and Menkes.

Building for Department of Transport—J. B. Parking Assoc.

Building for National Police Services, R.C.M.P.—Murray, Murray and R. Ogilvie.

Building for Taxation Division, Dept. of National Revenue—Page and Steele.

Cartier Square Buildings—Improvements—J. L. Richards and Associates Ltd.

Central Experimental Farm—K. W. Neatby Building Alterations and Improvements—H. Stutz.

Central Experimental Farm — William Saunders Building Alterations—I. H. de Neergaard.

Central Heating Plant on Cliff Street—Improvements—Surveyer, Nenniger and Chenevert and Adjeleian and Associates.

Confederation Heights—Central Heating Plant Improvements—J. Klassen.

Dominion Bureau of Statistics—Additions, Alterations and Improvements—Cummings and Scally.

Food and Drug Lab.—Additions and Alterations—Shore and Moffat.

Forest Products Lab.—Additions and Alterations—Edward J. Cuhaci.

H.Q. Building for Department of National Defence—Marani, Routhwaite and Dick.

H.Q. Building for R.C.M.P.—Additions, Alterations and Improvements—Penland, Baker and Polson.

Jackson Building—Alterations and Improvements—Strutt and Adamson.

Lorne Building—Improvements—E. Wootton and Associates.

Office Building for Government Departments—R. Ogilvie.

Parliament Hill—Centre Block—Improvements—Cummings and Scally.

Plouffe Park Warehouse—Improvements—Cummings and Scally.

Postal Terminal—Architects Collaborative.

Records Storage Building—Alterations and Improvements—Goodkey and Weedmark.

Sir Alexander Campbell Building—Repairs and Improvements—Goodkey and Weedmark.

Research Branch Building for Department of Agriculture—Braiss, Ouellette, Frigon, Brett, Hanley and Berthiaume.

Towards relocation of Mines Branch, Department of Energy, Mines and Resources—A. D. Margison and Assoc.

Tunney's Pasture—Animal Breeding Building Additions and Alterations—J. Klassen.

Tunney's Pasture—Central Heating Plant Improvements—Lalonde, Girouard, Letendre.

ONTARIO—OTHER THAN OTTAWA

Ajax—Public Building, T.C.—Banz, Brook, Carruthers, Grierson, Shaw.

Chatham—Public Building Improvements—J. W. Storey.

Cochrane—Public Building Additions and Alterations—R. Halsall and Assoc. Ltd.

Don Mills—Public Building Additions and Alterations—John B. Parking Assoc.

Eastview—Postal Station—W. E. Fancott.

Gananoque—Public Building, T.C.—H. L. Clow.

Hamilton—National Revenue Building Improvements—J. Poelmann Ltd.

Hamilton—Postal Station "C", T.C.—Frank H. Burcher.

Hamilton—Postal Station "D", T.C.—Roscoe and McIver.

Kenora—Public Building—Libling, Michener and Assoc.

London—Public Building—Improvements—Hagarty, Buist, Breivik and Milics.

London—Postal Station "C", T.C.—Hagarty, Buist, Breivik and Milics.

Napanee—Public Building, T.C.—Donald C. Griffin.

New Liskeard—Public Building—Additions and Alterations—R. Steward Smith.

Niagara Falls—Public Building—Improvements—D. N. Chapman.

Niagara Falls—Customs Building—Improvements—D. N. Chapman.

North Bay—Public Building—Improvements and Alterations, T.C.—Shore and Moffat.

Port Colborne—Public Building, T.C.—Stan H. Butcherd.

Richmond Hill—Public Building—Additions and Alterations—Douglas Allan.

Sarnia—Public Building—Improvements—Riddle and Connor.

Scarborough—Postal Station "B", T.C.—Craig, Feidler and Strong.

Sturgeon Falls—Public Building—Additions and Alterations, T. C.—Critchley and Delean.

Sudbury—Public Building—Alterations and Alterations, T.C.—Critchley and Delean.

Toronto—City Delivery Building Improvements—G. S. Adamson and Assoc.

Toronto—No. 1 Front Street Improvements—Nicholas, Fodor and Assoc.

Toronto—Postal Station "A" Improvements—Bregman and Hamann.

Toronto—Postal Station "S", T.C.—F. P. Meschino.

Toronto—Sir Arthur Meighen Building Improvements—Moffat and Moffat.

Walkerton—Public Building, T.C.—Riddle, Connor, Falls.

Windsor—Public Building Improvements—M. M. Dillon.

Woodstock—Public Building Improvements—Hagerty, Buist, Breivik and Milics.

CONSULTANTS ON PROJECTS ABROAD

PROJECT

Ankara, Turkey—Chancery Building

Bonn, Germany—Chancery Building

Warsaw, Poland—Chancery Building

New Delhi, India—Construction Programme in three stages

Brasilia, Brazil—Chancery, Official Residence and Staff Apartments

Islamabad, Pakistan—Chancery, Official Residence, Staff and Servants Quarters

Canberra, Australia—Official Residence

Belgrade, Yugoslavia—Chancery Building

Tokyo, Japan—Embassy Compound—New Chancery, Renovations, Staff and Servants Quarters

Washington, U.S.A.—Chancery Building

Accra, Ghana—Chancery, Staff Quarters

Dakar, Senegal—Official Residence

Mexico City, Mexico—Chancery Building

Kuala Lumpur, Malaysia—Official Residence and Staff Accommodation

CONSULTANTS

Fairfield and DuBois, Toronto, Ont.

Bolton, Ellwood and Aimers, Montreal

Smith, Carter, Searle Associates, Winnipeg

Gardiner, Thorton, Davidson, Garrett, Mas-
son and Associates, Vancouver

Thompson, Berwick, Pratt and Partners,
Vancouver

Waisman, Ross, Blankstein, Coop, Gillmor,
Hanna, Winnipeg

Erickson, Massey—Vancouver

Ouellet, Reeves, and Allain, Montreal

McCarter, Nairne and Partners, Vancouver

Moody, Moore and Partners, Winnipeg

Bland/Lemoyne/Shine, Montreal

Bland/Lemoyne/Shine, Montreal

Gaboury, Lussier, Sigurdson, St. Boniface,
Man.

Toby, Russell and Buckwell, Vancouver

APPENDIX E

ANSWER TO QUESTION BY MR. LANGLOIS, M.P.

CONTRACTS—\$2 MILLION AND OVER AWARDED BY DEPARTMENT OF PUBLIC WORKS IN 1968

Contractor	Description of Work	Low Bid	Bids Received
		\$	\$
La Compagnie de Construction Omega Ltd., Omega Ltd., Suite 501, 110 Place Cremazie W., Montreal (11), Quebec.	Construction of a Chronic Care Hospital including required miscellaneous hospital equipment at Ste. Anne de Bellevue, P.Q.	14,230,000.00	La Compagnie de Construction Omega Ltd.. Louis Donolo Inc. Atlas Construction Co. Ltd. & A. Janin & Co. Ltd. Argo Construction Ltd.
W.K. Mason Construction Ltd., Ottawa, Ont.	Construction of Postal Terminal Bldg., Ottawa, Ontario.	11,498,000.00 (D.P.W.)	V. K. Mason Construction Ltd. (Ottawa) Thomas Fuller Construction Co. (1958) Ottawa Argo Construction Ltd. (Montreal) Janin Building & Civil Works Ltd. (Montreal) The Foundation Company of Canada Ltd. (Toronto) Omega Construction Co. Ltd. (Montreal) Louis Donolo Inc. (Montreal) Pigot Construction Co. Ltd. (Ottawa) W. A. McDougall Ltd. (London)
P. E. Brule Co. Ltd., Ottawa, Ont.	Construction of an Environmental Laboratory for the Div. of Building Research of National Research Council at Ottawa.	2,033,000.00 chargeable to National Research Council	P. E. Brule Co. Ltd. (Ottawa) Pullock-McGibbon Ltd. (Ottawa) Cook & Leitch Ltd. (Montreal) J. G. Fitzpatrick Construction Ltd. (Montreal) James Nore & Sons Ltd. (Ottawa) Thomas Fuller Construction Co. (Ottawa) Cambrian Construction Ltd. (Montreal) C. A. Johansen & Sons Ltd. (Ottawa) M. J. Lafortune Construction Ltd. (Ottawa) Pisapia Construction Inc. (Montreal)
Argo Construction Ltd., 3901 Jean Talon St. West Montreal, P. Q.	Construction of General Purpose Office Building, Tunney's Pasture, Ottawa.	6,694,000.00 (D.P.W.)	Argo Construction Ltd. (Montreal) Janin Building & Civil Works Ltd. (Toronto) Omega Construction Co. Ltd. (Montreal) Thomas Fuller Construction Co. (Ottawa) Foundation Co. Of Canada (Toronto) V. K. Mason Construction Ltd. (Ottawa) Pigot Construction Co. Ottawa Dufréne Construction Co. Ltd. (Montreal) A. Lanctot Construction Co. Ltd. (Ottawa)

Contractor	Description of Work	Low Bid \$	Bids Received	\$
W. A. McDougall Ltd.	Construction of an Agricultural Research Laboratory at Harrow, Ont.	3,482,500.00 Chargeable to Dept. of Agriculture	W. A. McDougall Ltd..... Ascon Construction Ltd..... Inspiration Limited..... Ellis-Don Limited..... Collavino Brothers Construction Co. Ltd.....	3,487,000.00 3,497,500.00 3,534,000.00 3,570,534.00 3,594,000.00
Argo Construction Ltd., Montreal, P.Q.	Construction of Satellite No. 1 and Service Buildings, Maximum Security Institution.	10,870,000.00 Chargeable to Solicitor General	Argo Construction Ltd..... W. A. McDougall Limited..... James Kemp Construction Ltd..... Fraser-Brace Engineering Co. Ltd..... Pentagon Construction Co. Ltd..... Omega Construction Co. Ltd..... Ball Brothers Ltd..... Janin Building & Civil Works Ltd..... M. Sullivan & Son Ltd.....	10,870,000.00 10,972,000.00 11,112,000.00 11,113,000.00 11,118,350.00 11,400,000.00 11,440,000.00 11,498,000.00 11,567,777.00
Western Construction & Lumber Company Ltd., Edmonton, Alberta.	Right-of-way clearing Mile 167.3-286.5 and grubbing, grading, drainage, structures and screened gravel sur- facing Mile 167.3-229.0 Mackenzie Highway, N.W.T.	3,136,415.59 (Including 50,000 for sup- plementary work). Chargeable to LAND.	Western Construction & Lumber Co. Ltd. Edmonton..... The Cattermole-Trethewey Contractors Ltd. Vancouver..... Mannix Co. Ltd., (Calgary)..... Poole Engineering Co. Ltd. Edmonton..... T. A. Klempke & Son Construction Ltd. Edmonton..... George Ludwig Ltd., Calgary.....	3,086,415.59 3,089,197.05 3,134,840.20 3,354,318.74 3,474,796.86 3,990,897.00
Forest Construction Ltd., Edmonton	Construction of Forest Research Lab- oratory, Edmonton.	4,525,808.00 Chargeable to Dept. Forestry & Rural Development	Forest Construction Ltd., Edmonton..... Poole Construction Ltd., Edmonton..... Smith Bros. & Wilson Ltd., Edmonton..... Christensen & MacDonald Construction Ltd., Edmonton..... Burns & Dutton Construction Ltd., Edmonton..... Laing Construction & Equipment, Edmonton Bird Construction Co. Ltd., Edmonton..... Alta-West Construction Ltd., Edmonton....	4,539,808.00 4,581,508.00 4,599,817.00 4,648,842.00 4,649,000.00 4,669,000.00 4,708,480.00 4,817,747.00

CONTRACTS AWARDED—1968

CALENDAR YEAR (1 MILLION DOLLARS & OVER)

Contractor	Description	Low Bid \$	Bids Received	\$
Nova Construction Company Limited of Antigonish, N.S.	Paving and guard rail, access road, Argenteia, Newfoundland	1,423,705.75 chargeable to Department of Transport Funds	Nova Construction Company Limited, Antigonish, N.S. McNamara Construction of Nfld. Limited, St. John's, Nfld. Tynor Construction Nfld. Limited, St. John's, Nfld. Diamond Construction (1961) Limited, Fredericton, N.B. Lundrigan Limited, Corner Brook, Nfld.	1,423,705.75 1,437,134.80 1,541,565.05 1,560,357.50 1,593,677.15
Octo Construction Ltée, 50 Place Crémazie, Suite 1217, Montreal 11, P.Q.	For the conversion of Dormitory Buildings to Single Cell Housing Units at the Federal Training Centre, St. Vincent de Paul P.Q.	1,627,456.00 Chargeable to Canadian Penitentiary Services	Octo Construction Ltée Cambrian Construction Ltd. Argo Construction Inc. Pisapia Construction Inc. J. R. Robillard Ltée	1,627,456.00 1,672,000.00 1,722,000.00 1,744,000.00 1,768,200.00
Pisapia Construction Inc., Montreal, P.Q.	Addition and alterations, "G" and "H" Wing, R.C.M.P. Headquarters, Ottawa, Ontario	1,107,000.00 Chargeable to R.C.M.P.	In response to public advertisement the following bids were received, the lowest being recommended at a negotiated price of \$1,107,000.00: Pisapia Construction Inc. (Montreal) R.E. Stewart Construction Corp. (Montreal) Admiral Realty Construction Limited (Ottawa) Ron Engineering and Construction Ltd. (Ottawa) Mastercraft Construction (Ottawa) Limited (Ottawa) Uni-Form Builders Ltd. (Ottawa) Pillar Construction Limited (Ottawa) M. Sullivan and Son Limited (Arnprior) J. P. Morin Limited (Ottawa) A. Lanctot Construction Co. Limited (Ottawa)	1,127,000.00 1,158,000.00 1,186,340.00 1,190,257.00 1,197,000.00 1,197,810.00 1,201,000.00 1,222,213.00 1,278,400.00 1,388,000.00
Bedard Girard Limited, Montreal, P.Q.	The supply and installation of Mail Handling Equipment, Postal Terminal, Ottawa, Ont.	1,872,909.00	Bedard Girard Limited (Montreal) Jervis B. Webb Company of Canada Ltd. (Hamilton) Canadian Mechanical Handling System Limited (Windsor) Mathews Conveyor Company Limited (Port Hope)	1,872,909.00 1,923,648.00 1,947,100.00 1,970,372.00

Contractor	Description	Low Bid	Bids Received	\$
G. A. Baert Construction (1964) Ltd., St. Boniface, Manitoba.	Revenue Building Addition, Winnipeg, Manitoba.	1,852,000.00	G. A. Baert Construction (1964) Ltd., St. Boniface, Manitoba.....	1,852,000.00
			V. K. Mason Construction Ltd., Winnipeg, Manitoba.....	1,861,000.00
			Trident Construction Ltd., St. Boniface, Manitoba.....	1,899,900.00
			Arlington Builders Limited, Winnipeg, Manitoba.....	1,914,021.00
			Peter Leitch Construction Ltd., Winnipeg, Manitoba.....	1,930,000.00
			B. F. Klassen Construction Ltd., Winnipeg, Manitoba.....	1,979,789.00
Nanaimo Bulldozing Company Ltd., 68 Arena Street, Nanaimo, British Columbia.	For the maintenance of the Alaska Highway, Mile 496.0 to Mile 626.6, British Columbia, plus 36.5 miles of access roads to micro-wave stations and air-strips, for a period of three years.	1,129,092.00 (including 100,000.00 Supplementary Work)	Nanaimo Bulldozing Co. Ltd., Nanaimo, British Columbia..... Don Gordon Ltd. and Canlon & Parker Construction Ltd., Fort Nelson, British Columbia..... B. G. Linton Construction Ltd., Fort Nelson, B.C..... R. R. Dales Construction Ltd., Edmonton, Alta..... Twin Bridges Sand & Gravel (1960) Ltd., Edmonton, Alta.....	1,029,092.00 1,093,500.00 1,211,800.00 1,359,700.00 1,543,411.00
Vancouver Pile Driving and Contracting Company Ltd., North Vancouver, B.C.	The construction of river training structures including two rock groins and a rock training wall with two rock weir openings. This contract covers Phase 3 of 'Tri- furcation' on the Fraser River	1,727,000.00	Vancouver Pile Driving and Contracting Co. Ltd., North Vancouver, B.C..... McKenzie Barge and Derrick Co. Ltd., Vancouver, B.C.....	1,727,000.00 1,768,369.00

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

LIBRARY

ON
MAY - 1 1969

NATIONAL RESOURCES
AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 15

TUESDAY, MARCH 18, 1969

Respecting

Main Estimates (1969-70) of the Department of Public Works

WITNESSES:

(See Minutes of Proceedings)

THE QUEEN'S PRINTER, OTTAWA, 1969

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

Aiken,
Badanai,
Beaudoin,
Chappell,
Code,
Comeau,

Deakon,
Harding,
Langlois,
Lind,
Moores (*Bonavista-Trin-
ity-Conception*),

Paproski,
Ritchie,
Roy (*Timmins*),
³ Skoberg,
² Thomas (*Maisonneuve*),
Whicher,
¹ Whiting—20.

(Quorum 11)

Gabrielle Savard,
Acting Clerk of the Committee.

Pursuant to S.O. 65(4)(b)

¹ Replaced Mr. Sulatycky on March 17, 1969.

² Replaced Mr. Orange on March 17, 1969.

³ Replaced Mr. Gilbert on March 18, 1969.

MINUTES OF PROCEEDINGS

(Text)

TUESDAY, March 18, 1969.
(15)

The Standing Committee on National Resources and Public Works met this day at 11.10 o'clock a.m. The Chairman, Mr. Hopkins, presided.

Members present: Messrs. Badanai, Beaudoin, Chappell, Code, Deakon, Harding, Hopkins, Hymmen, Langlois, Lind, Paproski, Roy (*Timmins*), Thomas (*Maisonneuve*), Whicher, Whiting—(15).

Witnesses: From the Department of Public Works: Messrs. L. Lalonde, Deputy Minister; J. A. Langford, Assistant Deputy Minister (Design); W. Binks, Civil Engineering Programmes.

The Chairman called Vote 1—General Administration, 1969-70 Estimates, Department of Public Works.

Vote 1 was allowed to stand.

Votes 5, 10 and 15—Accommodation Services—were called.

On Vote 5—Maintenance and Operation of public buildings etc. \$111,232,600, Mr. Lalonde supplied information to the Members.

Vote 5 carried.

Vote 10—Acquisition of equipment and furnishings etc.\$1,746,000 carried.

Vote 15—Construction, acquisition, etc.\$103,486,000 carried.

The Chairman called Votes 20, 25, and 30, Harbours and Rivers Engineering Services.

Vote 20—Operation and Maintenance\$8,880,200 carried.

Vote 25—Construction or Acquisition of Equipment\$223,000 carried.

Vote 30—Construction, acquisition, etc.\$24,220,000 carried.

Votes 35, 40 and 50—Roads, Bridges and Other Engineering Services, were called.

On Vote 35—Operation and Maintenance etc.\$6,976,100

Mr. Binks supplied information to the Members.

Vote 35 carried.

On Votes 40 and 50, Mr. Binks answered questions of Members.

Vote 40—Construction, acquisition, etc.\$6,945,000 carried.

Vote 50—Construction through National Parks\$50,000
carried.

Vote 55—Testing Laboratories, Operation and Maintenance\$1,215,900
and Vote 60—Canadian Government Exhibition Commission—
Operation and Maintenance\$1,516,000

were called and discussed. Messrs. Langford, Binks and Lalonde supplied information to the Members.

Votes 55 and 60 carried.

Mr. Lalonde answered questions asked by Members at a previous meeting.

Agreed,—That the answer to the question by Mr. Sulatycky—List of Locations of Leased Post Office Accommodation—Alberta and List of Leased Postal Accommodation in Calgary District be printed as an appendix to this day's proceedings. (*See Appendix F*)

The Chairman thanked the officials of the Department for their being present at the last few meetings and for information given to the Members.

At 12.25 p.m. the Committee adjourned to the call of the Chair.

Gabrielle Savard,
Acting Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, March 18, 1969

• 1110

The Chairman: Gentlemen, I see a quorum and I call the meeting to order. When we closed the last meeting we were still on Item 1 of the Estimates and I had Mr. Sulatycky and Mr. Deakon on my list. Neither one of the gentlemen is here at the moment, so if there is no one else on this second round on Item 1 I will ask the Committee to stand Item 1 at this time and go on to Items 5, 10 and 15. As we have had a very free-wheeling discussion on Item 1, I will ask Committee members to restrain their remarks on Items 5, 10 and 15 to the specific subjects under discussion on these items. Is the Committee agreeable to stand Item 1 at this time?

Item 1 stood.

Accommodation Services

5 Maintenance and Operation of public buildings and grounds, including the provision, on a recoverable basis, of accommodation and related services for Canada Pension Plan purposes, and authority to provide assistance to (a) the International Civil Aviation Organization in the form of office accommodation at less than commercial rates and (b) the Ottawa Civil Service Recreation Association in the form of maintenance services in respect of the W. Clifford Clark Memorial Centre in Ottawa—\$111,232,600

10 Acquisition of equipment and furnishings other than office furnishings—\$1,746,000

15 Construction, acquisition, major repairs and improvements of, and plans and sites for, public buildings (including expenditures on works on other than federal property); provided that no contract may be entered into for new construction with an estimated total cost of \$50,000 or more unless the project is individually listed in the Details of the Estimates—\$103,486,000

The Chairman: Are there any questions?

Mr. Lind: In Item 5, I see there is an increase of \$11,304,800 in what I assume are salaries. Is there an increase in staff? I am referring to accommodation services under Item 5 on page 306. The increase is \$11,304,800 from 1968-69 to 1969-70.

Mr. L. Lalonde (Deputy Minister, Department of Public Works): Mr. Chairman, on page 311 you will see that under Item 5 the strength is given in detail in man-years between the 1968-69 situation and the forecast for 1969-70. You will see that for the capital region the total man-years last year was 1,844, the total man-years this year will be 1,757 which means a decrease. For other than the capital region, lower down on the page, you will see that last year it was 3,707 man-years against 3,578 for 1969-70, which again is a decrease.

Mr. Lind: Is there any place that we can find a breakdown? We have the Minister of Public Works' salary listed at the top of page 306. But is there any place that we get a breakdown from the Deputy Minister down and the assistants?

Mr. Lalonde: You mean the list of individual salaries.

Mr. Lind: Yes.

Mr. Lalonde: We would have to provide that at a subsequent meeting Mr. Chairman. Now does that mean the individual salary for every member of the department?

Mr. Lind: No, no. I am just interested in the top echelon just to see what the comparison is. What I am really interested in is where this \$11 million increase comes in. Is it in the number of man-years—apparently they were reduced—or is it in increased salaries to individuals?

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Mr. Lalonde: If you look at page 306 you will see that the total increase for general administration Item 1 is \$2,257,900. Now, on page 308 the increases in all of the items that make up this Vote are detailed. In salaries

and wages there is an increase from \$5,455,200 to \$5,592,000. Then if you go down the list you will see increases or decreases in the other items that comprise the Item. Page 308 deals with headquarters and then page 309 deals with the region, but again the same items are detailed there.

Mr. Lind: This \$11,304,800 under Item 5 that I am referring to is for lower echelons down the line and it is all over the country, is it?

Mr. Lalonde: That is right, sir. This does not deal with the top echelon at headquarters. Those are included in Item 1. Item 5 only deals with those people who are working on maintenance and operation of buildings. As you will see on page 311, the main increase, I believe, is an increase in rentals which is in the nature of nearly \$3 million between 1968-69 and 1969-70.

Mr. Lind: Page 311, rentals?

Mr. Lalonde: That is right.

Mr. Lind: How far down the page? I have not found it.

Mr. Lalonde: It is about the sixth or seventh line.

Mr. Lind: Oh, yes, I see it now, thank you very much.

The Chairman: Are there any other questions at this time?

Mr. Lind: Are most of those rental increases in the National Capital Commission or are they all pretty well standard across the country?

Mr. Lalonde: There is an increase of approximately \$2.5 million in the capital region and \$2.3 million in the rest of Canada.

Mr. Lind: Thank you very much.

The Chairman: Are you finished Mr. Lind?

Mr. Lind: Yes, thank you, Mr. Chairman.

Mr. Lalonde: May I point out, Mr. Chairman, that this increase is the result of renting additional space. It is not a question of renewal of leases at this particular time.

Mr. Lind: It is for expansion of departments?

Mr. Lalonde: That is right, sir.

The Chairman: If no one else wishes to ask a question at this time, I will put the question. Shall Item 5 carry?

Items 5, 10 and 15 agreed to.

DEPARTMENT OF PUBLIC WORKS

Harbours and Rivers Engineering Services

20 Operation and Maintenance—\$8,880,200

25 Construction or Acquisition of Equipment—\$223,000

30 Construction, acquisition, major repairs and improvements of, and plans and sites for, harbour and river works (including expenditures on works on other than federal property); provided that no contract may be entered into for new construction with an estimated total cost of \$50,000 or more unless the project is individually listed in the Details of the Estimates—\$24,220,000

(S) Dry Dock Subsidies—Canadian Vickers Limited, (Montreal)—\$180,000

Total—\$33,503,200

Items 20, 25 and 30 agreed to.

DEPARTMENT OF PUBLIC WORKS

Roads, Bridges and Other Engineering Services

35 Operation and Maintenance including authority to make recoverable advances in amounts not exceeding in the aggregate the amount of the operating expenses of the New Westminster Bridge—\$6,976,100

40 Construction, acquisition, major repairs and improvements of, and plans and sites for the roads, bridges and other engineering works listed in the Details of the Estimates, provided that the amounts within the Vote to be expended on individually listed projects may be increased or decreased subject to the approval of Treasury Board—\$6,945,000

Trans-Canada Highway—

(S) Contributions to the Provinces under terms of the Trans-Canada Highway Act—\$45,000,000

50 Construction through National Parks—\$50,000

Total—\$58,971,100

The Chairman: Are there any questions on Items 35, 40 and 50?

Mr. Lind: Yes, Mr. Chairman, I notice on page 331, "Ottawa—Alexandra Bridge—Repainting" and "Ottawa—Laurier Avenue Bridge—Repairs".

As these bridges are used for the convenience of moving traffic over provincial highways, are there any provincial grants

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towards the maintenance of these bridges at all?

Mr. W. R. Binks (Chief, Civil Engineering Program, Department of Public Works): Mr. Chairman, there are no provincial grants with regard to the Alexandra bridge. It is a bridge that, I think, was previously owned by one of the railways—the CPR—and has since been transferred to the federal government. In respect of the Laurier avenue bridge, there is a kind of mixed sharing of maintenance on that. The Department of Public Works handles some of it; the city covers some of the maintenance which was shared also by the railways, but I understand that portion is now the federal government's responsibility because the railways no longer pass under the bridge.

Mr. Lind: Thank you.

The Chairman: Are there any other questions?

Mr. Paproski: I would like to ask just one, Mr. Chairman. On this "Northwest Highway System—Reconstruction and paving—Mile 904.5 to Mile 928", has it been mentioned where this is from and where it goes?

Mr. Binks: Mr. Chairman, it is in the Whitehorse area. Whitehorse is at Mile 917.

Mr. Paproski: I see. What about the reconstruction of bridges on the Northwest Highway System, are they in the same area?

Mr. Binks: Mr. Chairman, this is a continuing program where we are replacing all the obsolete bridges along the System. There are many bridges that were built some years ago which have now deteriorated and there are others which were not designed for modern day loading which we are replacing.

Mr. Paproski: These are owned by the Department, are they?

Mr. Binks: They are all owned by the Department. That is right, sir.

Mr. Harding: How much money is going to be spent on the reconstruction of these bridges on the Alaska Highway during this coming year?

Mr. Binks: Two million dollars.

Mr. Harding: How many bridges will that cover?

Mr. Binks: I am not sure, but I think there are about eight bridges that we are replacing this coming year. I can get the details if you wish.

Mr. Harding: Do you have the location of them with you?

Mr. Binks: I have it some place amongst all these papers. Would you like the names of the bridges and their mileage?

Mr. Harding: Yes, the mileage and the locations of the bridges.

Mr. Binks: They are: Jarvis Creek, Yukon Territory, Alaska Highway, Mile 1034; Koidern River, No. 2, Yukon Territory, Alaska Highway, Mile 1164; Jackfish Creek, B.C., Alaska Highway, Mile 278; Parker Creek, B.C., Alaska Highway, Mile 246; Kathleen River, Yukon Territory, Haines Road, Mile 142; Takhane, Yukon Territory, Haines Road, Mile 102 and Blanchard, B.C., Haines Road, Mile 93.

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Mr. Harding: What was the third one again? Jackfish...

Mr. Binks: Jackfish Creek.

Mr. Harding: And what was the mileage?

Mr. Binks: Mile 278, which is in B.C. The next one, Parker Creek, was also in B.C.

Mr. Harding: Thank you.

The Chairman: Do you have any further questions, Mr. Harding?

Mr. Harding: No, not on this, Mr. Chairman.

The Chairman: If there are no further questions I will call the items.

Mr. Paproski: Are you going to call Item 40?

The Chairman: I am going to call Item 35. Shall Item 35 carry?

Item 35 agreed to.

The Chairman: Did you wish to ask a question on Vote 40?

Mr. Paproski: Yes please, Mr. Chairman. With regard to the items on page 332, you have estimated \$45 million as the contributions to the provinces under the Trans-Canada Highway Act. Can you tell me how this is split up among the provinces?

I am sorry, Mr. Chairman, there was a copy just given to us here, and if I may have a copy of that, it will be sufficient.

The Chairman: Thank you, Mr. Paproski. Any more questions on Item 40?

Item 40 agreed to.

DEPARTMENT OF PUBLIC WORKS

50 Construction through National Parks—\$50,000

Mr. Paproski: In Item 50 you have estimated construction through national parks in 1968-69 of only \$200,000, as compared to close to \$2 million for 1967-68. Could you please tell me why the difference? What did you do last year as compared to what you plan on doing this year?

Mr. Binks: All we are doing this coming year is some engineering. Last year, if I am not mistaken, it was mainly on improvement of some of the snow sheds through Glacier National Park.

Mr. Paproski: This is just engineering services then?

Mr. Binks: No. It is a construction vote. But we have practically wound up our program of the Trans-Canada Highway through the national parks.

Mr. Paproski: I see. So in 1968-69, to finish off the balance of the year, all you figure you are going to require is \$200,000? Yes or no?

Mr. Lalonde: Yes, Mr. Chairman. For 1968-69, \$200,000.

The Chairman: A supplementary question by Mr. Hymmen. I am sorry, Mr. Paproski, are you finished.

Mr. Paproski: Yes, I am.

Mr. Hymmen: I understand the provisions for the Trans-Canada Highway construction in the parks is exclusive of the statutory arrangement with the provinces.

Mr. Lalonde: That is correct.

The Chairman: Any further questions on Item 50?

Item 50 agreed to.

DEPARTMENT OF PUBLIC WORKS

Testing Laboratories

55 Operation and Maintenance—\$1,215,900

Canadian Government Exhibition Commission

60 Operation and Maintenance—\$1,516,000

The Chairman: Are there any questions on Item 55? Mr. Paproski.

Mr. Paproski: Thank you, Mr. Chairman. I would like someone to explain to me where these testing labs are set up in Western Canada, and if they are still in existence, and what their purpose is.

Mr. J. A. Langford (Assistant Deputy Minister (Design), Department of Public Works): Mr. Chairman. There is a remnant of the testing lab from Banff which was established when the main highway program was going through the park. Now it is located in Edmonton and in Calgary.

Mr. Paproski: Are you going to continue this service? Are you going to continue this service in Edmonton and Calgary? Are you disbanding your testing labs in Banff?

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Mr. Langford: We are continuing it, but on a very reduced basis.

Mr. Paproski: Are you still taking your concrete tests in Banff, now and your soil tests?

Mr. Langford: The general principle that is being followed is that we are utilizing consultative services wherever possible. However, the one in Edmonton is utilized for northern soils testing, analyzing concrete cylinders, and geological information on soil samples. This is generally done for Transport and so on, on the weather stations.

Mr. Paproski: Under "Rentals" here, you have \$31,600 for 1969-70. Could you please explain just what it is you are renting there? Is this office space?

Mr. Langford: No. Rentals in this instance generally refer to floating equipment like

boats or scows on which we mount our testing or drill apparatus. By the way, Mr. Paproski, I do not think I made it clear that the testing lab in Banff is completely closed out as of now.

Mr. Paproski: It is.

Mr. Langford: Yes.

Mr. Paproski: You are taking part-time, seasonal and casual help. Is most of your part-time and seasonal help university students?

Mr. Langford: To a large extent it is, yes.

Mr. Paproski: When you have these labs in Western Canada, do you take students from Western Canada for this part-time help through the universities, or do you take them from all points in Canada?

Mr. Langford: I would have to generalize on this, but as far as I know the crews are made up from all over Canada.

Mr. Paproski: Thank you, Mr. Chairman.

Mr. Chairman: Mr. Harding.

Mr. Harding: What other type of testing takes place at these laboratories?

Mr. Langford: The function involves construction and maintenance materials, primarily, which covers concrete, concrete aggregates, cement, ceramic materials, stone, metal, creosote protective coatings, and petroleum products. And we go right through all of the detergents and soaps and so on that are used in maintaining our buildings.

Mr. Harding: A further question, Mr. Chairman. Is there any co-ordination or co-operation with provincial testing labs?

Mr. Langford: Not on an official basis, but there certainly is related information. We are, as I said, by policy trying to use outside consultants to a large extent. What we are establishing here is standards, and we have to test the materials to see that they meet Canadian government standards. The co-operation with provincial associations or through the Canadian Standards Association and other such bodies is this. They have representatives on these bodies. Does that answer your question?

Mr. Harding: Just one more question, Mr. Chairman. You set the standards, but you actually do the testing of the materials that

go into the road-building. For example, piles for wharfs. Does all this come under these laboratories?

Mr. Langford: They can, yes. It depends on the job and what the specifications call for. We have calls for such testing by a multitude of government agencies as well, not just Public Works. Our testing facilities cover the entire government operation, including some Crown corporations.

Mr. Harding: Just one further question. How close is your liaison with the provincial departments, the laboratories? Is there a continual exchange of information back and forth between the two?

Mr. Langford: Yes, there is. Through the Canadian Standards Association, as I say, there is a continual upgrading and revision of standards, and they all have representations on standards associations.

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Mr. Harding: Is there a duplication of services in these various labs, provincial and federal?

Mr. Langford: Each provincial lab has its own particular input and requirement. Some provincial labs get into highway work. Ontario, for example. Alberta has a great deal of testing facilities on the petroleum side, of course. They vary from province to province.

Mr. Harding: I see. You try to avoid duplication, do you? Or do you just carry out...

Mr. Langford: We try to avoid duplication in establishing standards. Certainly a standard is an agreed on qualitative basis which is prescribed and agreed to by all laboratories.

Mr. Harding: Mr. Chairman, may I ask just one more question? Probably I should have brought it up under an earlier vote. There are varying standards, for example, in the construction of the Trans-Canada Highway; you have your minimum standards, and so on. I have noticed in the driving I have done across Canada that quite frequently sections of the road have gone to pieces very, very rapidly.

This seems to me to be a quite costly reconstruction project in some of the provinces. I presume that the provinces set these standards and if they want to accept a certain standard—if it is a matter of cost—this is, I

guess, by agreement between the federal and the provincial authorities. It seems to me that some of these standards must have been far too low considering the traffic we have today.

Mr. Langford: On the Trans-Canada Highway, the standards are very very meticulously spelled out as far as the government's part of the Trans-Canada Highway is concerned. These are spelled out in our arrangements with the provinces.

Mr. Harding: Yes, I understand this, but because of the break-up of large sections of the Trans-Canada Highway in some of the provinces it would appear that perhaps the standards are too low or the type of construction is not too good.

Mr. Langford: Mr. Binks could reply to that specifically.

Mr. Binks: Mr. Chairman, the agreement does spell out certain minimum standards; for instance, the 18,000-pound repeating axle load. First of all I should say that the provinces do the design of the roads. They do all the engineering and all the testing. During the early part of the agreement, the design techniques were not what they are today and we have found that many sections of roads were underdesigned. However, the new techniques of design, I think, will help to eliminate that considerably, but the maintenance of the road is purely a provincial responsibility.

Mr. Harding: I understand that.

The Chairman: I have Mr. Whicher who indicated he wants to ask a question and Mr. Paproski. Are these supplementaries? Was yours a supplementary, Mr. Paproski?

Mr. Paproski: No.

The Chairman: Then I will have to call on Mr. Whicher first and I will call on you second.

Mr. Whicher: Mr. Chairman, as a very small taxpayer, I am always interested in the amounts that are recoverable and in Vote 60 under Item (13) I see \$4,830,000 recoverable under this Vote and there was nothing last year. I am wondering just what this amount is?

Mr. Langford: That is under the Canadian Government Exhibition Commission and those amounts are recoverable from other government departments for exhibits.

Mr. Whicher: What about last year?

Mr. Langford: The Exhibition Commission was under the Department of Trade and Commerce the year before; it is just a part of the Department of Public Works for this particular Blue Book.

Mr. Whicher: Would any of EXPO's cost be included?

Mr. Langford: Not in this particular vote; no, sir.

Mr. Paproski: Mr. Langford or Mr. Binks, concerning the specifications that you use for concrete for most of your bridge designs, you

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do not use the C.S.A. specification. You have your own government specification. You do not go along with A.S.T.M. specifications, or am I wrong?

Mr. Langford: In bridge design?

Mr. Paproski: In bridge design, yes.

Mr. Langford: This is a matter of analyzing the particular requirement. Each one of the bridges that Mr. Binks outlined has particular design criteria. However, the basic standard is one of engineering standards that have to be met. Our testing is to see that they meet these particular specifications.

Mr. Paproski: I agree. Do you use C.S.A. specifications or do you use A.S.T.M. specifications in your design? There is a problem arising in many areas in Canada where different concrete suppliers have a problem meeting some of the specifications that the governments tend to put up. By doing so they usually add another \$5 or \$6 a yard because you gentlemen are so difficult so far as your specifications are concerned, tending to make the price of the bridge or the structure, which is concrete, much higher than it should be because sometimes it is very difficult to meet your type of specifications. Have you had this problem before, Mr. Langford?

Mr. Langford: As I say, without having a specific example, quite often these particularly higher standards are a result of the design criteria that go into a particular solution.

Mr. Paproski: But have you noticed that the price of your bridges and your concrete structures in some areas of Canada have gone up because of a radical change in design? Have you noticed this at all?

Mr. Binks: No; as a matter of fact, we have been getting very good prices up in the Yukon.

Mr. Paproski: Is it because prices are very competitive up there?

Mr. Binks: That is right.

Mr. Paproski: I see. But there is no other place in Canada that you can think of at the moment where the price might have risen in the last year or so because of your concrete design on a certain structure?

Mr. Binks: No, I do not think it would be because of the concrete design in any cases that I can recall. I might mention that I do not have a set of our specifications with me but in our specifications we often refer to C.S.A. or A.S.T.M. or some other agency and say that they have to meet certain requirements as set forth by C.S.A.

Mr. Langford: I might also enlarge on that. One of the main reasons for our particular laboratory set-up is to establish workable standards where there are areas that do not have standards, and usually this has an input, as I say, from many other bodies.

Mr. Paproski: Thank you.

The Chairman: Mr. Hymmen has a supplementary first and then Mr. Roy.

Mr. Hymmen: Mr. Chairman, I have a supplementary to Mr. Whicher's question. I believe he was asking about any amount recoverable from the testing laboratory which I do not think bears any relation to the Canadian Government Exhibition Commission. Are any amounts for testing for other departments recoverable, including the Department of Defence Production, or whatever the present name is for the central purchasing authority, or is this by intent grouped in Vote 60?

Mr. Langford: No; Vote 60 is the Canadian Government Exhibition Commission and Vote 55 is the Testing Laboratories but there are recoverables in the Testing Laboratories as well. If we do work for Central Mortgage and Housing Corporation—as an example, we may be asked to test paint to find out whether it meets our standards—we recover the costs of this from Central Mortgage and Housing Corporation.

Mr. Hymmen: Where is this shown?

Mr. Langford: It goes to the Receiver General.

Mr. Hymmen: There is no credit for it in this Vote?

Mr. Langford: There is no credit in this Vote at all; not under the Testing Laboratories.

Mr. Hymmen: Do you not think there should be? It would cut down the cost of your operations.

Mr. Langford: One of the reasons there is not is because we do not have an exact idea of when we are going to be called on to do these tests.

Mr. Lalonde: There is another reason, Mr. Chairman, and that is as you know there is a committee of the House looking at the manner in which the Estimates have been presented and studying a new method of presenting the Estimates. Eventually the Department of Public Works, which has now been designated as a common service department, under the new system when it is possible to put it in operation will be showing in the Estimates the amounts that are budgeted for recovery from other departments.

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In other words, we will be charging for services. We are not yet geared to do this but under the reorganization bill, when the Canadian Government Exhibition Commission was transferred to the Department of Public Works, they thought it was a good first step in implementing that service aspect of the work of the Department of Public Works, and that is why they show this year, as a recoverable amount, something which is really only bookkeeping because it is a transaction between agencies of the government itself.

Mr. Hymmen: Thank you.

The Chairman: I have Mr. Roy next on a supplementary, and then Mr. Whiting and I notice Mr. Harding has just indicated he wants to ask a question. Mr. Roy?

Mr. Roy (Timmins): Thank you, Mr. Chairman. To follow Mr. Paproski's line of questioning, I would ask the officials with regard to the designing of bridges, for instance, are your bridges overdesigned or not?

Mr. Binks: No, they are not.

Mr. Roy (Timmins): What kind of safety factors do you use in designing?

Mr. Binks: I am not a bridge designer, sir, so I am afraid I cannot answer that. When designing a bridge, they design it to what they call an H20-S16 loading, which is a combination tractor-trailer unit of a total weight of about 74,000 pounds. When they design a bridge, they design it with the most critical position of these two vehicles on the bridge, the odds of which ever happening are not too great. Therefore, you could have tremendous overloads on bridges—I do not know what they might be—but every province and every agency does give very heavy overload permits to truckers under certain conditions. It is normally passed through the bridge design people to see if this load can be held by the bridge. They might have to stop traffic on that bridge so they will not run into this critical point of two trucks hitting it at one particular moment. I do not know offhand whether it is a factor safety of three or four.

Mr. Langford: It depends, but I think it is four and in total destruction, for example, we will mock-up a member—a beam—in concrete and we will subject it in our testing lab to total destruction. To meet the standard, generally we have found there is a 400 per cent safety factor before the beam or the particular member completely disintegrates. This generally is built into the standard or the formula that the engineer uses in designing the particular member.

Mr. Roy (Timmins): Do you think that a 400 per cent safety factor is reasonable or is it too high?

Mr. Langford: Well, that is a very—

Mr. Roy (Timmins): As I take it, this would mean that you build for four times the strength that is actually required under the worst of conditions.

Mr. Langford: Before total destruction there will be signs of failure, obviously different degrees of failure, as Mr. Binks said. Part of the engineering capability is to figure out what the odds are of these conditions being met. You could design for 1,000 per cent safety if the economics warranted it, but we have found that the 400 per cent one meets our long-range lifespan, our maintenance factors and what have you. These are all fed into—

Mr. Roy (Timmins): I am concerned that it meets it too well.

Mr. Langford: Perhaps.

Mr. Roy (Timmins): Do you think this factor is too high or is this one that is prevalent in the industry? I know that engineers are notorious for safety factors. Is this reasonable or are you using too high a safety factor?

Mr. Langford: I just might say that this is an accepted procedure throughout any code. Perhaps it is too high, but the people who establish these codes right through the National Building Code do not find this to be too high. There are many things which enter into this, of course. For instance, where you are building in remote areas, you have to have very precise control on your mixing operations and so forth.

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Mr. Roy (Timmins): So you do have a policy where safety factors are concerned; it is not left up to the individual designer himself. Thank you.

Mr. Paproski: I have a supplementary, Mr. Chairman. As far as mixed design is concerned, when you build bridges up in Yellowknife—

The Chairman: Mr. Paproski, would you please use the microphone and repeat your question.

Mr. Paproski: I have a supplementary to my friend's questions. When you are building bridges or reconstructing bridges in the different areas in the north, what kind of control do you have over the ready-mixed plants in that area to make sure they do have these required specifications. Sometimes it is very difficult to try to meet the type of specifications that you require. If you were to ask someone to make a 5,000 pound strength with a three-quarter inch aggregate in that area using high Early cement, I doubt very much if you would be able to get it. What do you do in a case like that?

Mr. Langford: Well, generalizing again, if it is a remote area, we usually make provision for taking sample tests at the site. We do have arrangements for portable laboratory facilities. If we do not have a portable facility, we have to ship it into Edmonton or to Ottawa to check on the exact composition of that particular cylinder.

Mr. Paproski: This would take in the neighbourhood of 7, 14 or perhaps 20 days with the mail service now. Something very serious is going to go wrong with that cylinder because it may be left in some post office over the

week end. You never know what might happen to that cylinder.

Mr. Langford: As I said, we attempt to have the testing done as close to the particular project in all cases. However, I might add some additional information.

In our estimates for the testing lab, we have provision for buying some activated testing techniques. We now have a technique that is giving us reasonable accuracy on testing within 24 hours. This supplants the regular 3, 7, 14, 21 and 28 days. As you probably know a concrete does not reach its full maximum strength until 28 days has elapsed. We now have methods of activating this and we are getting very accurate results on a 24-hour test. This is interpolated.

Mr. Langlois: May I add, Mr. Paproski, that that would be the final testing on the actual concrete that had been poured, but the Department, as mentioned here, will have had prior to that, a look at the sand and the different types of aggregate; they also will have had a look at the stone to see if the stone is of good quality; if the cement is in good order, if the batching facilities are adequate and all that sort of thing. Therefore, testing the concrete is only the last . . .

Mr. Paproski: I appreciate that, Mr. Chairman and Mr. Langlois. There is only one other factor I am concerned about. Do you have facilities to test cube strengths in cement at these labs?

Mr. Langford: Yes, we have the impact testing techniques and so on, which give us an indicator, but they are not reliable enough to say this is actually the strength. We have hammer systems and what not that test...

Mr. Paproski: I meant cube tests of cement, not of concrete. Do you have facilities to test cube strengths of cement?

Mr. Langford: Yes, we do.

Mr. Langlois: I think they can break them on the same presses, Mr. Paproski.

The Chairman: I have Mr. Whiting down as the next questioner. Am I correct in that assumption?

Mr. Whiting: Yes, that is right.

The Chairman: And then Mr. Harding.

Mr. Whiting: I have just a couple of questions on these bridges in northern Canada.

Did you say that these were being handled by consultants or is the Department doing them themselves?

Mr. Langford: We are doing most of these bridges on the Alaska Highway within the Department.

Mr. Whiting: You are not using consultants?

Mr. Langford: Not in this particular instance.

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Mr. Whiting: Do you find it difficult to get the proper aggregate in that area to meet the standards that you have set for these bridges?

Mr. Langford: It does present a great deal of difficulty in some instances, yes.

Mr. Whiting: What do you do then? Do you have it shipped in over 100 miles or something of that nature?

Mr. Langford: If the standards have to be met, yes.

Mr. Whiting: Do many of the contractors building these bridges set up their portable batching plants?

Mr. Binks: Yes, I would say most of them do. Some of them use some pre-cast material, but most of them do their own pouring and mixing.

Mr. Whiting: Some are using pre-cast, are they?

Mr. Binks: It depends on the bridge itself—the design of the bridge.

Mr. Whiting: Is the Department looking into that area more and more—the use of pre-cast as opposed to the poured material?

Mr. Binks: Yes, we have called alternate tenders allowing different types of materials, the wale versus concrete versus pre-cast and so on.

Mr. Whiting: Would you get much variance in price?

Mr. Binks: I cannot give you...

Mr. Whiting: I am not asking for specifics, but generally speaking?

Mr. Binks: No, not too much.

Mr. Whiting: Thank you very much.

Mr. Harding: To get back to the testing lab again, when jobs are done for private contractors or for another department, is it on a cost basis?

Mr. Binks: Is it a cost basis that our lab operates on?

Mr. Harding: Yes.

Mr. Langford: Generally the cost principle applies for Crown corporations. . .

Mr. Harding: That is what I am thinking of, yes.

Mr. Langford: That is correct, yes.

Mr. Harding: For Crown corporations or some other department?

Mr. Langford: Yes, if we do testing for them it is on a cost basis.

Mr. Harding: Do you do any testing at all for private concerns?

Mr. Langford: No, we do not.

Mr. Harding: It is just for agencies within the government?

Mr. Langford: That is right and for materials that are going into our particular work. This will involve testing a great deal of private industry's output, of course. I am thinking in terms of door closures, paints and so on. Almost all manufacturers like to have their materials tested by us so that they are accepted as the standard.

Mr. Harding: I have just one more question. In the event you had an engineer on the job checking materials and so on and there was a failure, let us say you are building a bridge, would the Department accept the cost, accept the blame? What would happen normally or have you had any of these instances?

Mr. Langford: Not to my knowledge. When the Department undertakes a bridge design the responsibility is with the Department and when we hire outside consultants, the outside consultant by the nature of his contract becomes an extension of the Department of Public Works.

Mr. Langlois: Only as far as the design is concerned.

Mr. Langford: Yes, the design responsibility.

Mr. Harding: To your knowledge you have had no trouble in this connection?

Mr. Langford: No, I do not have any knowledge of any trouble, but perhaps Mr. Binks would know.

Mr. Binks: I suppose there often are mistakes made, but I really cannot recall, what you would call, any major mistakes or major failures in the past.

Mr. Harding: That is all, Mr. Chairman.

The Chairman: Mr. Paproski, do you have any questions on items 155 and 60 of Public Works estimates?

Mr. Paproski: Yes, I have just one further question Mr. Chairman. Mr. Langford, when did your Department start designing its own structures without consultants other than government consultants?

Mr. Langford: I think there has been an increasing tendency on our part to use outside consultants. We certainly have been using outside consultants ever since I have been involved with the Department.

• 1205

Mr. Paproski: I appreciate that, but that is not what I asked you. When did you start designing your own structures? When did the Department start their own designs? I know in the past you have used outside consultants, but now you are doing more of your own design work in your own Department. When did you commence doing this?

Mr. Binks: Mr. Chairman, in 1954 there was a reorganization in the Department at which time the Engineering Design Branch was formed and at that time the Structures Section for bridges only was set up—it actually was taken from the old Resources Department, I think. They do considerable bridge design, but we also put a number of bridges out to consultants. The MacDonald-Cartier Bridge is an example.

Mr. Paproski: I have one further question then. In 1954 when you decided to do your own consulting and your own design work as far as bridges were concerned, did you also start to do your own design work as far as your buildings were concerned?

Mr. Langford: No, the trend has been more and more to outside consultants. The Department at one time did the majority of the design in house and I think I indicated this earlier in an answer. I have checked on the

figures and would say that where design services are called for we utilize outside consultants for 75 to 80 per cent of our design work. The remainder is done in house. This is in total over the entire Department's operation.

Mr. Paproski: Fine, thank you.

The Chairman: Mr. Béaudoin?

Mr. Beaudoin: Regarding these bridges that you build in the North, do you always give these contracts by tender according to plans and specifications, or do you also give contracts on a percentage basis?

Mr. Langford: No, generally we only give contracts at fixed rates. We do not give contracts on a percentage basis.

Mr. Beaudoin: Thank you.

The Chairman: Mr. Whiting?

Mr. Whiting: I have one last question, Mr. Chairman. Does the Department have any pre-qualification standards for contractors bidding on your work?

Mr. Langford: It depends on the qualifications. I can answer that question with a "No."

Mr. Lalonde: We have done it, Mr. Chairman, on some large contracts and we intend to do it again. We are discussing with the Canadian Construction Association some methods of pre-qualification that are fair to everybody. It is not always easy to find the right procedure as compared with the principle of asking for public bids on which anybody can bid if they have the necessary capability. We are definitely interested in the principle of pre-qualification and I know of two instances where we have done it. It is possible to do it, but it always raises the question of why did we qualify those six contractors and forget somebody who was the seventh, who was not qualified and who then makes representation that he should have been qualified the same as the rest. However, it has advantages as well as disadvantages.

Mr. Whiting: I think you are no doubt aware that the Ontario Department of Highways has a pre-qualification system. Would you be moving in that direction? Will you be taking their methods of prequalification into consideration?

Mr. Lalonde: Not necessarily using their methods because so far we have not considered even going to pre-qualification for small

contracts which would, in effect, eliminate a lot of contractors who are on the way up and whose firms' capabilities are growing. We have only done this on some of the really major contracts we have had.

Mr. Whiting: One more question, then. What recourse would a supplier have if one of your contractors went broke part-way through a job or at the completion of a job? Is there any recourse?

• 1210

Mr. Lalonde: If I understand the question correctly, Mr. Chairman, you are asking concerning a sub-contractor or a supplier who has supplied labour or material for a specific project. If we are warned that his account has not been paid by the prime contractor we would take action to withhold money that we owe to the prime contractor to make sure that his lawful debts are paid. However, we have to know about these and sometimes we only know when it is too late.

Mr. Thomas (Maisonneuve): What happens then?

Mr. Lalonde: When the money has been paid we have no further responsibility. When we have completed payment on the contract as a whole we cannot be expected to pay an additional sum to satisfy the unpaid debts.

Mr. Whiting: But you do have holdbacks?

Mr. Lalonde: Oh, yes; that is what I am referring to, Mr. Chairman, when I say we withhold money with which we can pay those claims.

Mr. Langford: We also have a bonding system which, in part, covers some of these situations.

The Chairman: Mr. Harding?

Mr. Harding: Mr. Chairman, I have just one more question on this prequalification which I think is very interesting, although I think maybe we are a little off the item here; I do not know exactly how it relates to the testing laboratories. Getting back to this...

The Chairman: The Committee has been so co-operative today that I do not have the heart to be severe, Mr. Harding.

Mr. Harding: On this prequalification, you do a check to make sure they have the proper machinery to do the job?

Mr. Lalonde: We do more than that. When we want to use the prequalification method

we do it in conjunction with the Construction Association so that we will not be accused of using bias. We set up a joint committee with them and ask, perhaps 30 or 40 contractors whom we know have the capabilities but who may or may not be interested in that particular job, to fill out questionnaires which relate to their financial capabilities; their other contracts that are going on at that particular time to see if they are over-stretching themselves or not; their mechanical capabilities; their equipment capabilities, and we ask them to indicate whether or not they are interested in this particular job.

Then we submit those questionnaires to a Committee of experts who do not have any axe to grind in that particular project. This is the trick, you have to have people sitting on your committee who are experts in the construction field but who are not connected with any of the firms asked to tender on the job. As I said when we have those replies we submit them to the committee and the committee decides, after looking at the reports and depending on what we ask them to do, to point out to us which, in their estimation, are the six, seven or eight firms capable of doing this particular job.

We then invite those firms to tender, but their tenders are submitted and opened in the same way as public tenders. In other words, they have a deadline to submit a tender—a closed tender, a sealed tender—and those tenders are opened publicly at the same time. So, in effect, they are partly public bids and partly by invitation.

Mr. Harding: Thank you.

The Chairman: Mr. Beaudoin?

[*Interpretation*]

Mr. Beaudoin: When the work is concluded, how long does the contractor have to wait until he gets his final payment, particularly where concrete and metal bridges are concerned?

Mr. Lalonde: I think that this varies between 30 and 60 days, to enable us to know if there are any claims submitted by the subcontractors who have completed the last portion of the work.

• 1215

Mr. Beaudoin: And if there are defaults in the payment of subcontractors, do you wait until all the subcontractors are paid before

reimbursing the final part of the money that was held back?

Mr. Lalonde: Well, usually, we give 60 days to subcontractors. That does not mean that we always receive their claims always within the 60 days.

Moreover, the general contractor is obliged, when the work is finished, to make a statutory statement in which he swears that all his debts have been paid. We base ourselves on this statement and on the period of 60 days to know when we have to make the last payment. This does not mean that the statutory statements are always exact.

Mr. Beaudoin: Thank you.

Mr. Thomas (Maisonneuve): What happens when a subcontractor complains that he has not been dealt with fairly by the contractor? Is it the Department that settles the problem?

Mr. Lalonde: When we receive a complaint made by a subcontractor, we have to establish first whether his claim is justified. We have to establish that he claims payment for work or material that has been used in the construction of the project concerned. Then, we have to make sure that everybody agrees, the general contractor and the subcontractor, that the material and work went into the project in question. When this has been established, if the subcontractor can prove that he has not been paid or if the general contractor cannot prove that he has paid that debt we hold the amount until a decision can be taken that would be fair to both parties. Our decision may not be accepted and one of the two parties might decide to go to court.

[*English*]

The Chairman: Gentlemen, we are off Items 55 and 60 here in discussing these contractors. I recognized Mr. Code a while ago and it would be unfair to cut him off, because I assume that he wishes to follow the same line of questioning. I notice Mr. Harding has just indicated if there is further discussion on this type of thing that we should pass Items 55 and 60 and then revert to Item 1 for the remainder. If Mr. Harding is the only questioner left after Mr. Code, we can finish it off this way.

Mr. Code: I just have a short question, Mr. Chairman. If the general contractor, or the main contractor, had signed a statement that he had paid the subcontractor and he had not, what action would be taken against him?

Mr. Lalonde: In the past three years, I am aware of only one case where that happened and we referred it to the Department of Justice. The Department of Justice, in conjunction with the Crown prosecutor for the province involved, decided that there was sufficient evidence to warrant criminal prosecution, and the contractor was prosecuted and convicted.

Mr. Code: I might say that the case I have in mind is not with Public Works, but it is with one of the other federal departments.

Mr. Lalonde: It is supposed to be the same statutory declaration.

Mr. Code: Yes.

The Chairman: May I ask if there is any one, after Mr. Harding, who would like to pursue this? If so, I would like to call Items 55 and 60 at this time but if he is the last one we will let him go ahead and finish. Mr. Harding?

Mr. Harding: This is my last question, Mr. Chairman, and it is completely off the Item. Do you include in your contract to the prime contractor, or do you stipulate, that they must be responsible for any debts of the subcontractors?

• 1220

Mr. Lalonde: It is done in two ways, Mr. Chairman. On contracts over \$25,000, it is part of the general contractor's contract that he will be bonded for labour and material. The relevant clauses of the bond in the contract do apply and under those clauses it is imperative for the subcontractor or the supplier to warn the bonding company within a period of 60 days of the termination of that particular aspect of the work for which they are claiming. In other words, if a subcontractor finishes the electrical work on a certain date his 60 days start as of that date, not as of the end of the contract under the bond. In the same way, a supplier's 60 days would start from the date when he supplied the material.

Under \$25,000, unless we have some very specific reason for doing so, we do not insist that the general contractor be bonded. That is when the method I have just described comes into play more often, because normally the subs and the suppliers know that the general contractor is bonded and in order to protect themselves they immediately warn the bonding company that they still have a claim.

Where there is no bond there is no statutory period because the Crown is not subject to mechanics lien and so the statutory period under the Mechanics Liens Act does not apply to our contract. However, as I have explained to a previous questioner, we are attempting to keep this within a reasonable period. Otherwise, we would have to keep the last payment open for a year until perhaps somebody came in with a claim. We, in the Department, feel that we should have some kind of comparative situation with the Mechanics Liens Act and that there should be some statutory period during which a subcontractor or a supplier should warn us that he has an outstanding claim against the general contractor. At the moment, this is still not part of the regulations.

Mr. Harding: Have just one more question, Mr. Chairman. Suppose the subcontractor went broke, how about the workmen down the line who are working for him, have they any claim against the prime contractor?

Mr. Lalonde: They have no claim, but we have attempted to protect them and that is the reason for the statutory declaration. If a workman has a claim against a subcontractor and he does not get paid, he should, and many of them do, register his claim immediately with the Department of Labour. There is a statutory priority on those claims between the Department of Labour and ourselves.

Mr. Harding: That is fine, thank you very much.

Items 55 and 60 agreed to.

The Chairman: We agreed that we would leave Item 1 of the Department of Public Works open, so we cannot go back to pass it at this particular time.

I would like to thank the Committee for their co-operation this morning. I think Mr. Lalonde has a remark to make.

Mr. Lalonde: Before you adjourn, Mr. Chairman, I have the answer to two questions asked at a previous meeting, which perhaps I could put on the record now.

The Chairman: Fine, Mr. Lalonde.

Mr. Lalonde: The first question was asked by Mr. Orange about the leasing of what is described as the old liquor store in Hay River for the territorial court. A lease has, in fact, been executed for a period of three years with three one-year options. The annual rental rate is \$1 per year and we are responsible

for making the necessary alterations to these premises and we are responsible for maintaining them. This store, as perhaps some of you may know, belongs to the territorial government and the arrangement was approved by the Commissioner for the Northwest Territories.

• 1225

I would also like, in answer to a question by Mr. Sulatycky, to have attached as an Appendix to today's Minutes, a list of locations of leased post office accommodation in the Province of Alberta. The list is separated between the Calgary district and the Edmonton district but it covers the whole of the province.

The Chairman: Is it agreed by the Committee that this document be appended to today's Minutes?

Some hon. Members: Agreed.

The Chairman: If there is nothing else, I would like to thank Mr. Lalonde, Mr. Langford and Mr. Williams, who is not here this morning, and all their officials for being with us for the last few meetings and for answering the questions in the way they have. I think they have been very informative meetings.

Mr. Lalonde: I can assure you, Mr. Chairman, that it has been most enjoyable for us and in many cases very educational.

The Chairman: I adjourn this meeting now to the call of the Chair; thank you.

APPENDIX "F"

ANSWER TO

QUESTION BY MR. SULATYCKY

LIST OF LOCATIONS OF LEASED POST OFFICE ACCOMMODATION—ALBERTA.

LIST OF LEASED POSTAL ACCOMMODATION IN CALGARY DISTRICT

Acadian Valley; Beiseker; Bellevue; Black Diamond; Bowden; Calgary; L.C.D. No. 2; L.C.D. No. 3; L.C.D. No. 4; L.C.D. No. 5; Postal Station "A"; Postal Station "B"; Postal Station "D"; Postal Station "F"; Terminal Annex; Carbon; Carmangay; Caroline; Carstairs; Castor; Champion; Cremona; Crossfield; Delburne; East Coulee; Eckville; Elnora; Foremost; Granum; Hussar; Lake Louise; Lomond; Nobleford; Oyen; Penhold; Redcliff; Rosemary; Sundre; Turner Valley; Veteran.

LEASED POST OFFICES EDMONTON DISTRICT

Alliance; Beaverlodge; Berwyn; Bluffton; Boyle; Bruderheim; Chauvin; Cold Lake; Daysland; Derwent; Dewberry; Drayton Valley; Drinnon; Eaglesham; Edmonton; L.C.D. "8"; P.S. "A" (S.P.); P.S. "C" (S.P.); P.S. "D" (S.P.); P.S. "E" (S.P.); P.S. "L" (S.P.); P.S. "M" (S.P.); Fairview; Falher; Forestburg; Ft. McMurray; Ft. Vermilion; Girousville; Glendon; Grimshaw; Hardisty; High Level; Hinton; Holden; Hughenden; Kinuso; La Crete; Lamont; Legal; Marwayne; Mayerthorpe; McLennan; Millet; Mundare; Myrnam; Nampa; New Norway; New Serepta; Plamondon; Ponoka; Radway; Redwater; Rimbey; Rye-croft; Sexsmith; Sherwood Park; Slave Lake; Smith; Spirit River; Spruce Grove; Stony Plain; Strome; Swan Hills; Thorhild; Valleyview; Viking; Vilna; Wanham; Was- ketenau; Wembley; Willingdon; Winfield; Worsley.

correct
16

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69



STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 16

TUESDAY, MARCH 25, 1969

Respecting

Main Estimates 1969-70 of the Dominion Coal Board.

WITNESSES:

(See Minutes of Proceedings)

THE QUEEN'S PRINTER, OTTAWA, 1969

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

Aiken,
Badanai,
Beaudoin,
Chappell,
Code,
Comeau,
Deakon,

Harding,
Langlois,
Lind,
Moores
(*Bonavista-Trinity-
Conception*),
Paproski,

Ritchie,
Roy (*Timmins*),
Skoberg,
¹ Sulatycky,
Whicher,
Whiting—(20).

(Quorum 11)

J. H. Bennett,
Clerk of the Committee.

Pursuant to S.O. 65(4) (b)

¹ Replaced Mr. Thomas (*Maisonneuve*) on March 21, 1969.

MINUTES OF PROCEEDINGS

[Text]

TUESDAY, March 25, 1969.
(16)

The Standing Committee on National Resources and Public Works met this day at 8.12 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Aiken, Badanai, Chappell, Code, Comeau, Deakon, Harding, Hopkins, Hymmen, Lind, Paproski, Roy (*Timmins*), Skoberg, Sulatycky, Whiting—(15).

Witnesses: From the Dominion Coal Board: Honourable J. W. MacNaught, Chairman; Messrs. Alexander Brown, Executive Director; Maurice Lajoie, Financial Officer; J. Y. Fortin, Statistics Officer; and G. W. McCracken, Secretary to the Board.

The Chairman called Item 75—Estimates 1969-70 of the Dominion Coal Board—

Administration and Investigations of the Dominion

Coal Board \$ 180,000.

The Chairman introduced the Honourable J. W. MacNaught, Chairman of the Dominion Coal Board who read a statement and was questioned.

Following further questioning of the witnesses—Item 75 was carried.

At 9.45 p.m. the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, 25 March 1969

• 2011

The Chairman: Gentlemen, I see a quorum, so I will call the meeting to order. I will call Item 75 of the 1969-70 estimates.

D—DOMINION COAL BOARD

75 Administration and Investigations of the Dominion Coal Board—\$180,000

The Chairman: I will call upon Hon. J. Watson MacNaught to introduce the officials who are here with him tonight.

Hon. J. W. MacNaught (Chairman, Dominion Coal Board): Mr. Chairman and gentlemen of the Committee. This is the second occasion on which I have appeared before you and, as I indicated last year, it is always a pleasure to contribute toward the important work of this Standing Committee.

I should now like to introduce my officials. On my immediate right is Mr. Alexander Brown, Executive Director of the Board. Next to Mr. Brown is Mr. Maurice Lajoie, Financial Officer, and next to him is Miss Helen O'Heare, the Assistant Financial Officer; next is Mr. John Fortin, our statistics officer and next to Mr. Fortin is Mr. George McCracken, Secretary of the Board.

The Chairman: Thank you very much, Mr. MacNaught. I now will ask Mr. MacNaught to deliver his statement on behalf of the Dominion Coal Board.

Mr. MacNaught: Thank you, Mr. Chairman. Last year I opened my introductory remarks with a summary of the history and functions of the Dominion Coal Board since its inception in 1947. I am prepared to repeat this summary if the Committee so wishes but, in the interest of saving the Committee's time—I understand an important vote is going to be held later on this evening and some of you may wish to get to it—it appears preferable to forego this summary and proceed to other matters.

These other matters include important developments that have occurred within the

Canadian coal industry and in which the federal government has played a significant role. To a large extent these matters have been covered or introduced in the Annual Report of the Dominion Coal Board and I understand, Mr. Chairman, that the Committee members have now received copies of that report.

Broadly, changes occurring in the industry are leading to a much stronger economic position in Western Canada and for the Maritimes there has been a start on rationalization programs that should help to resolve some of the chronic problems of that region. In total, we may look forward with considerable confidence to an economically sound and progressive growth in Western Canada and also toward an orderly phasing down of the industry in the Maritimes.

• 2015

The rate of growth in Western Canada will accelerate strongly because of the sharply rising exports to Japan and, importantly also, to a steadily increasing demand within Canada by the thermal electric industries of Alberta and Saskatchewan.

For example, the exports to Japan which totalled about 1.3 million tons in 1968 will rise to nearly 10 million tons per annum in the next two to three years. This is based on signed contracts. The entrance into this market of mining companies which are now in the exploration and development phase, could raise this substantially by another three to four million tons.

With regard to the thermal electric industry of Alberta, this now consumes about 1.5 million tons of coal per year. This market shows strong growth and a reasonable expectation is that it will exceed six million tons per year by the end of the 1970's. This market, by itself, will require a doubling of the present total output of coal in Alberta. In Saskatchewan, the enlargement of the thermo-electric station at Estevan should increase its lignite requirements from the present level of 1.1 million tons per year to nearly 2 million tons.

In Central Canada, a strong continuing growth can be expected in the demand for imported coal by the thermo-electric industry of Ontario. As well, the steel industries at Hamilton and Sault Ste. Marie, which are fully on American coal, will increase their present coal requirements. In my last year's presentation, I referred to the activities of the Dominion Coal Board with respect to recovering the Sydney steel market for Cape Breton coals and I am happy to report that this market is now being progressively recaptured from imported American Coal.

Further to the Cape Breton collieries the Board is now engaged, in co-operation with the Audit Services Branch of the Comptroller of Treasury, in the final audit of the mining operations formerly conducted by Dominion Steel and Coal Corporation Limited. This audit is necessary not only for making final adjustments in subvention payments, but also for evaluating the coal stocks taken over by DEVCO and certain other properties of the Corporation. I would also report that the Dominion Coal Board has completed the assignment given to it by government to purchase coal mechanization equipment for these large Cape Breton collieries. This equipment has been transferred to the present operator, the Cape Breton Development Corporation, or DEVCO.

For New Brunswick, the Dominion Coal Board has provided advice and assistance to provincial officials in preparation for their new task of administering financial aid to the coal mines of that province. This transfer of responsibility is in accordance with the Canada-New Brunswick agreement of March 26, 1968 whereby, in return for certain federal grants, the province has assumed all further financial responsibility for its coal mining industry.

Briefly also, during the year, the Board took active part in promoting research and development related to coal, as well as providing a co-ordinating service to all federal departments including statistics on availability, prices and characteristics of coals. The Board also organized and administered the annually-held Canadian Conference on Coal, the most recent of which was held in Quebec City in September, 1968.

The Chairman: Thank you, Mr. MacNaught. I will ask now for questions on the first round and so far I have on my list, in this order,

Mr. Aiken, Mr. Roy, Mr. Chappell, Mr. Sulatycky, Mr. Deakon, Mr. Whiting and Mr. Harding.

• 2020

Mr. Aiken: I would like to ask Mr. MacNaught what part the Coal Board is playing now in connection with the Nova Scotia collieries. Has it been completely taken over by DEVCO or does the Board have some part in making the subsidy payments?

Mr. MacNaught: We have no part in making any subsidy payment to Nova Scotia with the exception that the subventions are paid on an interim basis awaiting a final audit. When that audit is completed we will then be able to make the adjustments. That is our only connection with the coal mining industry of Cape Breton.

Mr. Aiken: Similarly, I notice in your statement that the Board is pretty well out of New Brunswick in connection with the administration of coal subsidies.

Mr. MacNaught: With the payment of coal subsidies, that is absolutely correct. We are in the process at the moment of turning over to New Brunswick loans under the Coal Production Assistance Act.

Mr. Aiken: Are there still some duties in relation to the West, to the Alberta situation?

Mr. MacNaught: Oh, yes, they are tremendous.

Mr. Aiken: What I am leading up to, Mr. MacNaught, is that the Board seems to have managed—I would not say to have worked itself out of a job, but gradually its duties are being cut back in various areas. Do you see the Board being absorbed within the Department rather than being a special agency?

Mr. MacNaught: I should imagine that it is the intention of the government at some appropriate time in the future to dissolve the Dominion Coal Board and the work that is necessary to be performed at that time will be done, I presume, by some branch of the Department of Energy, Mines and Resources. The present staff of the Board will, no doubt, be absorbed into that Department.

Mr. Aiken: Another comment I have to make is that their spending estimates have been drastically reduced of late when compared with previous years. Is your staff being reduced or is it being maintained at the same level?

Mr. MacNaught: The staff has been reduced from a normal of about 20 down to the present number of 16. We have lost four members over the last year or so.

Mr. Aiken: You do not intend to replace them until the status of the Board is more definitely settled then?

Mr. MacNaught: That is correct.

Mr. Aiken: Thank you, Mr. MacNaught.

[Interpretation]

Mr. Roy (Timmins): Mr. Chairman, I wonder whether Mr. MacNaught could explain the increase in the contributions to the pension fund. This vote has increased from \$10,800 to \$21,000.

[English]

Mr. MacNaught: I shall ask Mr. Lajoie to answer that question.

[Interpretation]

Mr. Lajoie (Financial Officer): This is the amount that was given to us by the Treasury Board.

Mr. Roy (Timmins): Is there an explanation for the doubling of this figure?

Mr. Lajoie: I do not know the reason myself. This is the amount that was given to us in the Estimates.

[English]

Mr. Roy (Timmins): Mr. Chairman, possibly we could get an explanation for this later as the gentlemen does not have the answer to my question. It was with regard to the retirement pension fund. There was an increase from \$10,800 to \$21,000 for the same number of personnel.

Mr. MacNaught: Mr. Chairman, the reason is not obvious to me at the moment, but if it is satisfactory, I shall have our financial officer prepare an answer and table it in writing tomorrow.

Mr. Roy (Timmins): That is certainly satisfactory to me, Mr. Chairman.

• 2025

Mr. A. Brown (Executive Director, Dominion Coal Board): This increase, as you probably know, is applicable to all departments. You will notice it is not limited to the Board and there has been a similar increase in other departments.

Mr. Roy (Timmins): Right, but I would still like to have an explanation of what exactly caused this increase.

[Interpretation]

With regard to "salaries". I presume that this means employees' salaries. The number of the personnel has not changed from one year to the other. Yet I see that the total figure for salaries has increased by nearly 30 per cent. Are we to assume that the salary raises of employees for the year were increased by 30 per cent?

Mr. Lajoie: The amount of \$100,000 for 1968-69 is not the original estimate. Since the Dominion Coal Board was supposed to be dissolved during the year, the amount provided by the Treasury Board was for a portion of the year only. As the Dominion Coal Board operated during the whole year, the salaries amounted to \$120,000 instead of \$100,000 for 1968-69.

Mr. Roy (Timmins): You say that for 1968-69 the total is thus \$120,000?

Mr. Lajoie: Yes, approximately.

[English]

Mr. Chappell: All my questions are rather general, Mr. MacNaught. Could you tell me please, in a nutshell, the duties and aims of the Coal Board?

Mr. MacNaught: Originally, the Coal Board was set up as the result of a recommendation of a royal commission presided over by the late Judge Carroll of Nova Scotia. Its purpose originally was to give advice to the government on matters pertaining to coal marketing and so on, to which was added later the responsibility for administering the Coal Production Assistance Act, the subvention payments and payments under the Canadian Coal Equality Act.

Mr. Chappell: Is there any research carried on by the Coal Board at its request or direction in respect to production or marketing?

Mr. MacNaught: Most of the experiments carried on by the Coal Board in relation to coal were designed to improve the quality of coal and so on. For example, to reduce the amount of sulphur in coal so that it would be more suitable for the manufacture of coke. A program was carried out in New Brunswick to determine the value of the Minto coal fields, the amount of coal remaining there and programs of that nature.

Mr. Chappell: Do the terms of reference to the Board include research investigation in respect of production and perhaps marketing, also?

Mr. MacNaught: Yes, you are correct.

Mr. Chappell: Is it a general field to advise the government in everything?

Mr. MacNaught: In everything, yes. I beg your pardon. I thought you were asking me about special studies that we had engaged experts to carry out. We, as a Board, are carrying out constantly the functions set out for marketing and so on and giving the government advice along those lines. We have carried out special studies.

Mr. Chappell: Does that include more efficient ways of producing it from the ground?

Mr. MacNaught: Yes, oh yes.

Mr. Chappell: Could you please tell me where or in which provinces are located the major deposits now being mined or the ones still available for future use? I am not certain in what parts of Canada really big deposits lie.

Mr. MacNaught: The deposits that are creating the most attention at the moment are the deposits in the Rocky Mountains in Alberta and British Columbia because they are the foundation for the export to Japan. In Saskatchewan, the lignite fields around Estevan are very important and also there is the sub-bituminous coal in Alberta which is used for the purpose of generating electricity.

Mr. Chappell: Is there anything of any consequence in Manitoba, Ontario, Quebec, or the Northern Islands?

Mr. MacNaught: There is nothing of any consequence.

Mr. Chappell: Do we feel there is not any or have we just not found it yet. We do not know. I am wondering what the geologists say?

Mr. MacNaught: From a geological standpoint I would say that it is fairly certain there is no coal in commercial quantities in the areas you mentioned.

Mr. Chappell: Geologically there are no signs to indicate that there is any in those areas?

Mr. MacNaught: That is correct, with the one exception that south of James Bay there is a lignite deposit that may prove commercial and economical to mine. There is a study going on there at the present time by the private industry, and it may in the future prove economically sound to mine that coal.

Mr. Chappell: Is that a big deposit?

Mr. MacNaught: It is a very substantial deposit.

Mr. Chappell: So if we learn how to use it, that could perhaps affect the development of Northern Ontario. At least it could create power.

Mr. MacNaught: Well I have to say marginally. I would answer that marginally.

Mr. Chappell: Is there any deposit of any consequence in the Maritimes other than the ones in Nova Scotia that we all know about.

Mr. MacNaught: No, no.

Mr. Chappell: What is a rough percentage of the amount of coal used today for thermo production, that is, electricity from coal?

Mr. MacNaught: You mean Canadian coal?

Mr. Chappell: Yes. I really meant to say, of all the coal burned in Canada is it 10 per cent or 50 per cent in thermo production?

Mr. MacNaught: Well there were 28 million tons of coal burned in Canada last year; of that, 11 million tons of Canadian coal were used for the production of electricity.

Mr. Chappell: Do you anticipate—

Mr. MacNaught: I must correct that. It was Canadian and American coal amounting to 11 million tons.

Mr. Chappell: Do you anticipate that will continue to be a consumer of coal in future or may thermo production switch to atomic energy or something?

Mr. MacNaught: I do not think that in Saskatchewan or Alberta there will be a move from coal in the foreseeable future because in Saskatchewan lignite is the cheapest source of electric energy available in that province. I am safe in saying also that in Alberta the sub-bituminous coal is also the cheapest form of electrical energy.

Mr. Chappell: You do not see in the immediate foreseeable future atomic energy

putting the coal people out of business, at least in certain areas?

Mr. MacNaught: No, I do not think so.

Mr. Chappell: With our reserves, how long are we good at today's consumption? Is it 20 years or 100 years?

Mr. MacNaught: That is a very difficult question to answer because every person who makes a survey will carry it out on a different basis. However, I think we are safe in saying that we have enough coal deposits in Canada to last us for a thousand years. That is coal that can be recovered, that can be mined and so on.

Mr. Chappell: I have just one more question. I am wondering why the Japanese came so far? Now I appreciate when it is carried by ships from Australia and the United States it is a long way, but this seems to be a long haul overland.

Mr. MacNaught: You mean the haul from the mountains from Alberta to Port Moody. With the Japanese, it is purely a matter of economics.

Mr. Chappell: Why can we do it so much cheaper than a mine close to the sea, for instance?

• 2035

Mr. MacNaught: Well the Australian people have that advantage. They are closer to sea but their coal is not quite as good for metallurgical purposes as the Canadian coal is. The coal being produced in the Rocky Mountains at the present time is probably without equal in the world for metallurgical purposes. The Pocahontas coal may be a little bit better but—

Mr. Chappell: That is Pennsylvania, is it not?

Mr. MacNaught: Pennsylvania coal, yes.

Mr. Chappell: Do we use any of that good coal in Alberta for metallurgical purposes?

Mr. MacNaught: In Canada?

Mr. Chappell: Yes?

Mr. MacNaught: We do not use any of that coal.

Mr. Chappell: Why is that? Is it cheaper to get it from Pennsylvania?

Mr. MacNaught: No we do not use Pennsylvania coal in Canada for metallurgical purposes.

Mr. Chappell: What do we use?

Mr. MacNaught: We use our own coal. For a while in Sydney, they were importing coal from the United States but recently that trend has reversed due to taking the sulphur out of the coal.

Mr. Chappell: The metallurgical purpose I infer is to do with making steel or iron?

Mr. MacNaught: Making coke, making coke to make steel.

Mr. Chappell: Do we not use any of the Alberta coal in Canada at all for that purpose?

Mr. MacNaught: A small amount.

Mr. Chappell: Is that in Alberta or in Ontario?

Mr. MacNaught: It is used in Alberta.

Mr. Chappell: Where do we get it from in Hamilton?

Mr. MacNaught: In Hamilton, they get it from the United States.

Mr. Chappell: Thank you.

Mr. Sulatycky: Mr. MacNaught, the Canadian coal, I understand, represents today about 4 per cent of the coal used by the Japanese iron and steel industry. Is that correct?

Mr. MacNaught: That is a correct estimate.

Mr. Sulatycky: The American coal which has to be transported much further represents about 40 per cent of the Japanese.

Mr. MacNaught: Forty per cent and I believe the Australian coal is about 40 per cent, too.

Mr. Sulatycky: When our imports to Japan increase so that our current contracts are being met what percentage of the total Japanese usage will the Canadian coal comprise?

Mr. MacNaught: That will have to be a very, very rough estimate because the Japanese demand for coal is going to increase also but I would estimate probably between 20 to 25 per cent.

Mr. Sulatycky: So that we will then be significantly bettering our share of the Japanese market.

Mr. MacNaught: Extremely so.

Mr. Sulatycky: What I was trying to find out whether we are doing a good enough selling job on the Japanese market. If we get 25 per cent it appears we are.

Where will the next Dominion-Provincial Conference on coal be held?

Mr. MacNaught: Calgary.

Mr. Sulatycky: And the one after that?

Mr. MacNaught: I do not know.

Mr. Sulatycky: Might I suggest the new town of Grande Cache which should be familiar to you as the location of the McIntyre Porcupine Mine in Northern Alberta as it will be one of the leading coal communities in the world.

Mr. Paproski: On a point of privilege, Mr. Chairman, I think Edmonton should take it from Calgary.

Mr. Sulatycky: Edmonton can have the oil conferences and we will take the coal conferences.

In the Hamilton market is there a tariff on the American coal which is being brought in?

Mr. MacNaught: For what purpose?

Mr. Sulatycky: For metallurgical purposes.

Mr. MacNaught: For metallurgical purposes, no.

Mr. Sulatycky: There is no tariff?

Mr. MacNaught: No. On coal being brought in for purposes of raising steam, there is a tariff of 50 cents which is being reduced. I think there was a ten per cent reduction made last year and it will be gradually reduced until it is all off; that is a result of the Kennedy Round. There have been two ten cent reductions since the Kennedy Round started.

Mr. Sulatycky: Is the Coal Board involved in any manner in the present relocation of miners from the Atlantic Provinces to the mines in the Rockies?

Mr. MacNaught: No, I was going to say thank God for that, but I did not.

Mr. Sulatycky: Those are all the questions I have on this round, Mr. Chairman.

● 2040

Mr. Deakon: Mr. MacNaught, could you please tell us what types of coal are mined in Canada.

Mr. MacNaught: What types of coal? There is the bituminous, sub-bituminous and lignite. Also there is a very good type of bituminous coal in the Rockies that is classed by the Japanese as anthracite.

Mr. Deakon: What type of coal is mostly exported?

Mr. MacNaught: That is the medium to low volatile bituminous coal.

Mr. Deakon: What percentage do we export to other nations? What percentage of our coal production do we export?

Mr. MacNaught: About 10 per cent.

Mr. Deakon: What percentage of that goes to the United States?

Mr. MacNaught: Oh, an infinitesimal amount, about 100,000 tons.

Mr. Deakon: Now, Mr. MacNaught what do you feel about the competitive position of coal as an energy producer compared with nuclear energy, gas and oil?

Mr. MacNaught: Again, it will depend largely on the locale. As I said, I think it was to Mr. Chappell, the lignite at Estevan is the cheapest source of electrical energy you can get. The same is true of the sub-bituminous coal of Alberta. If you need the electricity and you set up your plant close to your mine so you do not have to haul the lignite far, because the economics would not permit moving lignite very far, then it is a very cheap source of energy.

Mr. Deakon: In other words, you are saying that the proximity of the source availability is what controls the relative competition factor.

Mr. MacNaught: That is right, yes. It is a bulky product and it is extremely expensive to move. In the case of lignite, you are moving an awful lot of ash and waste products when you move a ton of lignite.

Mr. Deakon: Now I have had many representations from coal producers and coal distributors with reference to their competitive position, for example, bidding on public works contracts where certain institutions are being constructed, such as jails.

Mr. MacNaught: Yes.

Mr. Deakon: What, if anything, is your Board doing to encourage or assist or advise the government on the relative costs that they may be saving by utilizing coal instead of other sources?

Mr. MacNaught: Well we furnish a chairman who presides over a board that makes the investigation. As that chairman is sitting right beside me I will ask him to answer that question. Will you tell them what you do Mr. Brown?

Mr. Brown: This is the interdepartmental fuel committee which investigates whenever any federally-operated heating plant is to be renewed or newly built. A comparison of costs is made by the department concerned and this is vetted by the interdepartmental fuel committee to get the relative costs of operating on gas, oil, coal or electric heating. The committee merely makes a finding; any further action is the responsibility of the department concerned with public works or penitentiaries. They go ahead with final decisions on what has to be done.

With respect to the type of plant you are talking about, this would be say, for a penitentiary or for a large office building, these are what they call the medium size and small size boilers. Unfortunately in that particular category coal is not very competitive because that is the very field in which gas and oil are at their comparative best. In other words, you can automate gas and oil much better in a medium or small size boiler.

The situation changes completely when you get into the size of boilers used by the Power Commission of Ontario or the Alberta Power Commission. With this size of boiler you can economically mechanize the handling of the ash and the coal and under those conditions coal is by far the cheapest fuel. Research is needed in the automation of the medium and small size boiler. This is one of the most important things with regard to coal.

• 2045

Mr. Deakon: Well, sir, are you consulted before the specification are set on these various contracts?

Mr. Brown: Yes.

Mr. Deakon: You are, and have you had an opportunity to see whether your wisdom is being used?

Mr. Brown: We always ask them to check back a year later.

Mr. Deakon: Thank you. Those are all the questions I have, Mr. Chairman.

Mr. Harding: Mr. Chairman, I would like to ask Mr. MacNaught a few questions on coal imports into Canada. What is the total amount in tons of coal imported into Canada last year?

Mr. MacNaught: Fifteen million.

Mr. Harding: Fifty million?

Mr. MacNaught: Fifteen million.

Mr. Harding: Fifteen, and did it all come from the United States?

Mr. MacNaught: Yes.

Mr. Harding: What was the total output by Canada last year in coal mined?

Mr. MacNaught: Eleven million tons.

Mr. Harding: That included export and domestic use?

Mr. MacNaught: That is right, yes.

Mr. Harding: What type of coal was imported?

Mr. MacNaught: Bituminous coal, steam-raising coal.

Mr. Harding: All bituminous coal.

Mr. MacNaught: It would be all bituminous coal.

Mr. Harding: Approximately what percentage of the total Canadian consumption was imported?

Mr. MacNaught: It would be 15 out of 28.

Mr. Harding: That is a little better than half.

Mr. MacNaught: Yes.

Mr. Harding: I have several other questions because I want to try to tie this in. How many coal miners were employed in all the coal operations in Canada last year?

Mr. MacNaught: Seven thousand six hundred, approximately.

Mr. Harding: Is this a reduction or an increase over the previous year?

Mr. MacNaught: A reduction.

Mr. Harding: How much of this coal was used in the thermo-electric field?

Mr. MacNaught: Eleven million tons.

Mr. Harding: How much was used in the steel industry?

Mr. J. Y. Fortin (Statistics, Dominion Coal Board): It was 5.8 million tons for 1967 and 7.4 million tons for 1968.

Mr. Harding: Where does the coal for the steel industry come from? Is that of Canadian origin or is it of American origin?

Mr. Fortin: It is American, 7 million tons American and the rest 400,000 tons Canadian.

Mr. Harding: Oh, I see, 7 million tons American.

Mr. Fortin: Right.

Mr. Harding: Now what type of coal would this be?

Mr. Fortin: Bituminous coal.

Mr. Brown: I might just say that the Chairman referred a moment ago to the recapturing of the city market, that was a gain in metallurgical coal.

Mr. Harding: Then roughly last year there was, would you say, 18 million tons of coal imported from the United States?

Mr. MacNaught: Fifteen million.

Mr. Harding: I had 7 million for the steel and 11 million for the thermo-electric. Some of the thermo-electric was Canadian consumption.

Mr. MacNaught: Yes, you are right.

Mr. Harding: May I go back then and ask this question. How much of the thermo-electric coal was imported from the United States.

Mr. Fortin: The figures are 5.4 million imported and 5.7 million Canadian for 1968. The figures for 1967 are 4.9 million Canadian and 4.1 million American.

Mr. Harding: What are the sources of this bituminous coal in the United States? How close to the border do these coal fields lie?

Mr. Brown: About 300 miles, in Pennsylvania and Virginia.

Mr. Harding: Are they able to bring coal into Canadian at a cheaper rate than we can

take our bituminous coal from, say, our western coal fields to these areas?

Mr. Brown: From the Rocky Mountains, yes.

Mr. Harding: How much cheaper?

• 2050

Mr. MacNaught: It would have to be a very rough estimate about \$8 to \$10 a ton cheaper.

Mr. Harding: About \$8 to \$10 a ton cheaper. What would a ton of American bituminous coal, we will say, delivered at one of our thermo-plants cost?

Mr. Brown: Approximately \$9. I am giving you the figure for Ontario Hydro now.

Mr. Harding: Yes. It would cost approximately \$18 to deliver that same coal from the western fields?

Mr. MacNaught: That is right, yes.

Mr. Harding: What is the price of coal we are getting for the coal we are shipping to Japan?

Mr. MacNaught: The average price would seem to be to run around \$12.

Mr. Harding: What would be the end delivered price?

Mr. MacNaught: Approximately \$4 more.

Mr. Harding: I see and that would be about...

Mr. MacNaught: I think the price to Japan is about \$17. There may be some extra charges in there.

Mr. Harding: It is cheaper to dig it out and ship it to the coast and trans-ship it to Japan than it is to bring it from western Canada to Ontario.

Mr. Brown: We are dealing with two different kinds of coal and two different prices. What goes to Japan is a metallurgical coal which commands a premium price all over the world, you know, anybody's metallurgical coal. That coal you are referring to, as the Chairman replied, coming into the power plants of Ontario is a steaming coal and commands a smaller price. Now, for example, if we compared the cost of American metallurgical coal to a steel plant in Ontario then you are going to talk \$12 a ton delivered, at least.

Now, this is what you will compare with what goes to Japan from western Canada, the same kind of coal.

The western producers in Canada of metallurgical coal can mine and ship to Japan or they will when they have their big contracts going at competitive prices. In other words, they will get about \$12 for that coal on board ship at Vancouver. The reason they cannot do it in eastern Canada is because of the long rail hauls. Rail hauls are in the order of \$10 or \$11 for a ton of coal from Alberta to Ontario.

Mr. Harding: What are the closest sources of supply to our thermo-electric plants in and around Ontario?

Mr. Brown: Pennsylvania.

Mr. Harding: Well, I am thinking in terms of Canada.

Mr. MacNaught: In Canada I suppose the closest would be the Sydney coal-fields. The Minto field would be a little closer probably in New Brunswick.

Mr. Harding: How many miles would that be?

Mr. MacNaught: About 1,000 miles, about 1,200 miles I am told.

Mr. Harding: The duty on coal coming into Canada now is 30 cents a ton as of the beginning of this year?

Mr. MacNaught: That is right. It was 50 cents, it was cut by two 10's, it is down to 30 cents and will be eventually eliminated.

Mr. Harding: It will drop 10 cents a year for the next three years.

Mr. MacNaught: That is correct, yes.

Mr. Harding: You have explored every avenue that there is, I presume, to make certain that there is no Canadian source of coal that can compete with the present American source; I mean as far as price is concerned.

Mr. MacNaught: Yes.

Mr. Harding: Is there no place where Canadian coal can be shipped to in the United States to compete with them on the same basis as they are competing in the Ontario market?

Mr. MacNaught: I would think in the West, yes, that is true. That market will develop, we see that developing now.

Mr. Harding: Why has it not developed before?

Mr. MacNaught: Well, the need did not exist.

Mr. Harding: They do not have the steel plants and the thermo-electric plants and so on.

Mr. Brown: They have them but they are small, outside of California.

Mr. Harding: Have you ever paid a subvention on any of this coal going to these thermo-electric plants in Canada?

• 2055

Mr. MacNaught: Oh, yes. We paid a subvention on coal going from Sydney to the Hydro in Ontario on 750,000 tons of coal for three or four years or longer.

Mr. Harding: What would that subvention have been?

Mr. MacNaught: In the order of approximately \$9 a ton.

Mr. Harding: I notice in your book here you have given some very interesting figures—I do not know whether I can dig them up right now—on the cost of production per ton. Just what does this really mean? Is this the cost of digging it out of the ground?

Mr. MacNaught: This is on page 42. The heading on that page is "Canadian Coal Mines Operating Costs and Revenues" and the operating costs include labour, maintenance, repairs, welfare, vacation pay and so on.

Mr. Harding: I see you have the different provinces listed there, is that it?

Mr. MacNaught: Yes, Nova Scotia, New Brunswick, Saskatchewan.

Mr. Harding: I see you have this measured in percentages; What does this mean? Oh, I see it means dollars, yes.

Mr. MacNaught: Yes, percentage of the total cost.

Mr. Harding: I see the Chairman is flagging me down so my time is up.

The Chairman: Thank you Mr. Harding. I recognize Mr. Whiting.

Mr. Whiting: Mr. Chairman, I wonder if Mr. MacNaught can tell us how much is being

spent on research? You mentioned research earlier.

Mr. MacNaught: Fifty thousand dollars.

Mr. Whiting: Is that per year?

Mr. MacNaught: It was fifty thousand last year. This year we are down to \$30,000.

Mr. Whiting: Why would you cut back on research?

Mr. MacNaught: We did not cut back, the government cut us back. I cannot comment on why they did.

Mr. Whiting: No, all right; I did not realize that. Would you like to spend more on research?

Mr. MacNaught: We would like to spend a lot of money on research because research on coal has been woefully neglected in Canada. The industry has done little or nothing in relation to coal research, particularly in comparison with what they have done in the United States.

Mr. Whiting: Is there a Canadian coal association or something of that nature?

Mr. MacNaught: A Canadian coal association, no, but there is an association in the West with headquarters in Alberta which draws together four or five of the large mining companies in the mountains, that is about all. There is one in New Brunswick, I am told.

Mr. Whiting: Well, do these people engage in any research?

Mr. MacNaught: No.

Mr. Brown: I would say the home of research is here in Ottawa. The main research centre is here in Ottawa in our fuels research centre. They work very closely in co-operation with us on subjects that are say, of concern to the coal industry, for example, reduction of sulphur in coal, reduction of ash content in coal, better use in boilers and so forth. This research is being done largely by the federal government within the Department of Energy, Mines and Resources.

Mr. Whiting: Then do I understand that they only allow you \$30,000?

Mr. Brown: We use this to support subjects which are, say, of keenest interest to us. We could use more but we are limited to that. We spread it out.

Mr. MacNaught: The answer was yes.

Mr. Brown: Well, not quite.

Mr. Whiting: All right. You say you had \$50,000 last year and you have \$30,000 this year, what would you gentlemen like to see it be?

• 2100

Mr. Brown: I do not think there should be any grand enlargement of the research grants. I think proper use of what is available now, in rough figures I think if our \$30,000 were more in the order of \$100,000 which is still a modest sum, would do much towards sparking research on coal within the provinces and in the universities. I do not think any large sum is needed but a reasonable sum used intelligently. Right now in Canada all combined we are spending in the order of half a million dollars—there must be some modest improvement on that—by the Mines Branch by universities and so forth.

Mr. Whiting: I did not quite understand the last part of your answer. How much did you say is being spent in universities?

Mr. Brown: In total across Canada something in the order of \$500,000 per year on coal studies of which, as we have indicated, the Board contributed at one time \$50,000 and this year will contribute \$30,000. That is about the structure of coal research in Canada. It is not large.

Mr. Whiting: Do you initiate them?

Mr. Brown: Some of them.

Mr. Whiting: I now would like to touch on the Cape Breton collieries. You mentioned you are phasing out the collieries in Cape Breton, and yet I see...

Mr. MacNaught: We are not phasing out...

Mr. Whiting: All right, the...

Mr. MacNaught: The Development Corporation.

Mr. Whiting: DEVCO is phasing them out. How many collieries were there in Cape Breton, say, five to ten years ago—the producing collieries—and how many are there right now that are producing?

Mr. MacNaught: Well, 10 years ago there would have been approximately 10. At the present time there are four collieries under the management of DEVCO and two collieries

under the management of private enterprise. There are six collieries producing coal in Cape Breton at the present time.

Mr. Whiting: Is Devco phasing out those four collieries that come under their jurisdiction?

Mr. MacNaught: I would think possibly "phasing down" would be a better phrase than "phasing out". Production is being reduced somewhat and the goal, I believe, is eventually to phase out one or two of the collieries.

Mr. Whiting: Is there any coal from Cape Breton being exported to the United States?

Mr. MacNaught: No, none.

Mr. Whiting: Is the reason because it all is being used at Sydney or is it not competitive price-wise or quality-wise?

Mr. MacNaught: It would not be competitive price-wise, but it would be competitive quality-wise, although not for every purpose. The Sydney coal is high in sulphur—it runs about 2 to 3 per cent sulphur—and they have coal in an area of the United States which is much lower in sulphur than that. It is low sulphur coal that makes good coke.

Mr. Whiting: I have one other question. Are you familiar with the coal mines that were in operation on Bell Island?

Mr. MacNaught: That was iron ore.

Mr. Whiting: Was that iron ore?

Mr. MacNaught: Yes.

Mr. Whiting: Oh, I am sorry.

Mr. MacNaught: There is very little coal in..

Mr. Whiting:...in Newfoundland?

Mr. MacNaught: Yes, there is some, but the seams are very thin and it is not economically sound to mine.

Mr. Whiting: Then all the coal that is being mined in Cape Breton is being used at the Sydney mill?

Mr. MacNaught: Oh, no, much of it is being exported—exported is not the word to use. I should have said shipped to Quebec and Ontario—750,000 tons go to Ontario Hydro from Sydney and coal goes from Sydney to Sudbury and other parts of Ontario. If you

want more detail, I would have to ask Mr. Lajoie to give it to you as I cannot recall all the names.

• 2105

Mr. Lajoie: There are 166,000 tons that remain in Cape Breton for steel plants; there are 750,000 tons that go to Hydro Ontario; there are about 50,000 tons that go to a pulp and paper plant in Quebec; there are a few hundred thousand tons that go to different industries in Ontario—I do not have the exact amount—and some goes to power commission in Nova Scotia, as well.

Mr. Whiting: Would you know if this coal from Cape Breton goes to the Hydro plant in Lakeview which is..

Mr. MacNaught: Yes, three-quarters of a million tons a year.

Mr. Whiting: But some of their coal is imported also?

Mr. MacNaught: Five million tons.

Mr. Whiting: Why would that be?

Mr. Brown: They use about 5.5 million tons. Nova Scotia just buys about three quarters of a million tons because the bulk from the United States is cheaper. The only reason it is burned at these stations is because a subsidy of \$9.00 is being paid on it. Cape Breton coal is burned at Ontario Hydro; it does not meet the competition by \$9.00. That is the amount of subvention that used to be required, so it is quite uncompetitive.

Mr. Whiting: Then who is paying the subsidy on the private industry? Did you not say that some was going to a pulp and paper mill?

Mr. Lajoie: Yes, but we do not have anything to do with subsidies to Cape Breton. DEVCO took over and we have nothing to do with that.

Mr. MacNaught: The purpose of the subvention was to keep the mine in operation and if Ontario Hydro or any other industry would use 750,000 tons of coal, it was felt desirable that that coal should be exported from Sydney to Ontario Hydro. So, it was exported.

Or to any other person...

Mr. Whiting: Any other person?

Mr. MacNaught: Yes, it made no difference because it was Hydro. They were just a con-

venient market at the time the market was needed.

Mr. Lajoie: The basic policy of the subvention was to allow the native coal—the Cape Breton coal—to be laid down at the market at the same price as the competing fuel, either imported oil or imported coal. We calculate the cost to that customer of the two, either the imported fuel or the native fuel, including the freight difference and all the rest.

Mr. Whiting: Could you give me those figures again for the coal to the Hydro plant at Lakeview both from the United States and from Cape Breton?

Mr. MacNaught: About \$9 a ton is the difference in the landed cost of American coal at the power station at Lakeview.

Mr. Whiting: Yes.

Mr. Brown: It is of the order of \$8.90 to \$9.00. It may be even a little higher, say, \$9.05 but it is of that order.

Mr. MacNaught: You must remember that since April, 1968, we have had nothing to do with the subvention whatever.

Mr. Whiting: It has been transferred to DEVCO?

Mr. MacNaught: DEVCO are shipping it. How they do it, I do not know.

Mr. Whiting: Thank you very much.

The Chairman: Mr. Comeau?

Mr. Comeau: I had the impression when the Coal Board was before us prior to Christmas and again tonight that you seem to have a negative attitude and are very depressed about the whole coal industry. I wonder if you really are convinced that there is a future for the coal industry here in Canada?

Mr. MacNaught: I could not be more optimistic. I regret that any impression of defeatism was created, but I could not be more optimistic about the future of the Japanese market for metallurgical coal from the Rocky Mountains area. There is a tremendous future there.

• 2110

Mr. Comeau: Are you also optimistic about the Coal Board? I understand there has been some talk that this Board will be disbanded. The Board's duties, as I see them, should be the promotion of the coal industry in general,

not only in finding markets paying subventions and all that, but to really push this industry. Over the last several years in Cape Breton, for example, the whole coal mining operation has been taken over by DEVCO which really completely ignores you people. I wonder if you feel the Coal Board can still operate as a Board and can you give me reasons why there is talk of phasing out this Board and incorporating it with the Department?

Mr. MacNaught: Mr. Comeau, it would be extremely difficult to answer a question of that nature because it is basically a question of government policy.

Mr. Comeau: Yes, I understand that, but there are other Boards or other Crown corporations that perform duties and there is no talk about them being incorporated under...

Mr. MacNaught: I do not want to get into a discussion on it with you, Mr. Comeau, but I understand that some other Boards are being absorbed into one or other of the departments. I did read somewhere recently where the Atlantic Development Board...

Mr. Comeau: Yes, that is one.

Mr. MacNaught: ...was being absorbed into the Manpower Department.

Mr. Comeau: Yes, that is right.

Mr. MacNaught: It struck me at the time that maybe it was government policy to bring back into the departments the boards and agencies that were spread out from the departments a few years ago.

Mr. Comeau: Have you ever suggested, have you ever studied or have you ever recommended to the government, let us say, the possibilities of increasing markets within Canada? A moment ago you were discussing the subsidizing of the Atlantic Provinces, coal—Nova Scotia coal—to make it more competitive. I think you mentioned the figure of \$9 a ton. Have you ever made recommendations with regard to the transportation of this coal, among other things, which could reduce this subsidy?

Mr. MacNaught: Yes, very definitely the Board has made recommendations over the years suggesting different ways of mining coal, introduction of modern mining machinery and certain types of machinery.

Mr. Comeau: Have any of these recommendations been implemented?

Mr. MacNaught: Some of them have, but again you are getting into realm of a report by a department to its minister and that, of course, has always been regarded...

Mr. Comeau: Have you ever made recommendations with regard to transportation?

Mr. MacNaught: Yes.

Mr. Comeau: Have any of these been implemented?

Mr. MacNaught: Yes, of course.

Mr. Comeau: Because I know that in the Atlantic area there is a tremendous transportation problem. If this could be solved it might reduce some of our disparities because, as I understood it, you said tonight, for example, that an electric plant was using three quarters of a million tons of Nova Scotia coal, but five million tons of American coal?

Mr. Brown: Yes, that is in Toronto.

Mr. Comeau: Well, surely the government should take action if these recommendations have been made.

Mr. Brown: I think, first of all, you are looking for a few concrete examples to indicate what the Board has done and what its attitude is toward coal. Perhaps the discussions this evening struck you as being a little bit defeatism. I assure you that is far from the truth.

With regard, now, to improvements in the industry, we will start with the mining of coal from the sea. The Coal Board has made recommendations in respect—this is going back 15 or 20 years—of improving the type of machine used in the mines, let us include the mines in your area—the Sydney Coal fields—and the Board has granted loans to the operators down there under the Coal Production Assistance Act. For example, just before DEVCO was formed the Board was faced with the possibility that these mines might be unorganized and closed before DEVCO could take over. In the light of that and to avoid disruption down there,—again I will repeat, this was before the Cape Breton Development Corporation was formed—the Dominion Coal Board made arrangements to purchase almost \$4 million worth of mining equipment; it made the selection of this mining equipment, arranged for the money to pay for it, federal money; had the equipment bought and delivered to the mine down there and it is operating. A whole range of modern mining equip-

ment is in these mines now. This equipment is all working satisfactorily and it is on the job. I agree it would be useful to DEVCO.

Now to go beyond that, how to move the coal. Again it is through the Dominion Coal Board that you have a coal loading pier in Sydney. Now this coal loading pier was put up through the capital of, or by, the operators of the day, Dominion Coal Company Limited, but under arrangements whereby they could get it paid back through coal movement; subventions paid on coal movement.

Now, this is quite a modern pier designed to handle the two large self-unloading vessels, the *Cape Breton Miner* and the *Ontario Power* which have been pulling this coal up into the Lakes. This is backed up with a very modern coal loading service. This is Coal Board participation. Then, of course, the two boats themselves are both part of the Coal Board development. The development of a market with Ontario Hydro for three quarters of a million tons a year on a temporary basis, say for a decade or a decade and a half, was an emergency requirement necessary to stabilize the Cape Breton economy. These boats were laid on to substantially reduce the cost of hauling from Sydney to the Lakes. They are self-unloading, very modern boats.

Now then to swing into New Brunswick, the Dominion Coal Board conducted a study of that field to see what could be done underground in these very thin seams. It determined without a mistake that nothing could be done in these particular seams.

This gave an answer that the Province of New Brunswick could build on. It also indicated the future and how to work the remaining reserve in the Minto field, and that is, the program which the Province of New Brunswick is now operating on, a rationalization program. This is the Dominion Coal Board.

Now swinging out West, the whole Japanese export movement was developed and supported through the Dominion Coal Board with federal funds until it is at the stage now where it is in the final phases. Within a year or two will be quite a viable movement with tremendous benefits to the railway. The railway will be moving 10 million tons of coal per year. There will also be tremendous benefits to the ports of British Columbia.

I would say that the Coal Board has been rather modest, although it is described fairly

well in the annual reports just given to you. It is eager in whatever guise to keep promoting coal. If I just could wind up this matter, they say, "Why bother with coal, with all this gas, oil and uranium power around why bother with coal? I will just close by saying that there is more recoverable energy in coal reserves than in all our reserves of oil, natural gas and low cost uranium oxide combined. There is more in coal than all these totalled together, multiples more. Because of our escalating energy needs, by 1990 to 2000 we will need all of everything; we will need all our oil, all our gas, all our uranium oxide, all our hydro and all our coal. So this is a temporary situation of temporary oversupply. We shall have to make prudent use of all our energy resources and the present situation of over-supply is a short term phenomena. We must adopt a more constructive and longer term view towards all our energy resources. This is where coal fits, it is a massive energy source.

• 2020

Mr. Comeau: Thank you, Mr. Brown. One other question is this. You mentioned a while back that the duty on American coal was being reduced from—is it 50 cents to 30 cents? Did your Board recommend this or do you approve of this? Is this not one way of again helping the American market while not increasing our own?

Mr. MacNaught: It was part of the GATT arrangement, beyond that I cannot go.

Mr. Comeau: Yes, but has your Board made recommendations on this?

Mr. MacNaught: On that particular reduction, no, as far I know.

Mr. Comeau: But are you not concerned about this?

Mr. MacNaught: The recommendations were there before I became Chairman of the Board. I do not imagine they would make any recommendations on that.

Mr. Comeau: Are you not concerned about this? This is using more...

Mr. MacNaught: Mr. McCracken do you know if there were any?

Mr. McCracken (Secretary, Dominion Coal Board): There certainly was consideration of the matter. The 50 cents a ton duty can be traced back to the first problems of the coal

industry after Confederation, when one of the first things the new Government of Canada had to deal with was the abrogation of the Reciprocity Treaty of the United States by which Nova Scotia was supplying most of the eastern or Atlantic seaboard with coal. From then it stayed on for generations and generations at 50 cents. It is recognized that part of the thinking at the time—this was before you came to the Board—part of the thinking at the time was that no matter what was done with rail transportation rates, as they were at that time and still are, nothing could be done to make Canadian coal, either from the West or from the East, competitive in the central region, Toronto say, with the American coal, except at very, very heavy subvention costs. As Mr. Brown said, it is \$9 a ton for the Ontario Hydro coal.

Under those circumstances, the Board of several years ago, when the GATT reductions were first being discussed, had the feeling that for the benefit of Canadian industry as a whole, it was better to have a gradual reduction of the duty on the American coal and get the energy into central Canada, where it could be used, at 50 cents a ton less as it will be eventually after the progressive 10 cent reductions, than to spend \$9 a ton getting the Canadian coal to Toronto. In other words, energy was being thought of as part of the total economic pattern. I do not think this was too loudly discussed but it was also thought the 50 cents a ton reduction, the eventual elimination of the coal duty, might be used as a *quid pro quo* in the Gatt and Kennedy Round.

Mr. Comeau: I have one more question, Mr. Chairman. Before I ask it may I say I appreciate the fact that Mr. MacNaught has said there is a great future for coal. I think so too. Consider for example, Cape Breton, where there seemed to be no hope for the coal mine. DEVCO took it over and it seems to work fine. My other question was: how much does the Canadian government pay as subvention to Japan?

• 2125

Mr. MacNaught: It is on a reducing basis, the maximum at the moment is \$2.73 a ton and it will work down.

Mr. Comeau: It is \$2.73?

Mr. MacNaught: A ton, and it will be eliminated in 1971, that is the last year.

Mr. Comeau: I think my time is up.

Mr. Aiken: I have a supplementary, I would like to ask Mr. Chairman.

The Chairman: Mr. Aiken, I have two other people down here for supplementaries and I am trying to hold them off until we have the questioners out of the way. Mr. Skoberg is next.

Mr. Skoberg: Mr. MacNaught, I notice that one of the activities of your Board is the development of a system and method for mining, marketing and utilization of coal. Have you made any recommendations to the coal companies for the strip mining operation, the type you mentioned you had gone into a considerable amount of research on methods of mining? Have you made recommendations as to new methods of strip mining?

Mr. MacNaught: I do not believe so. Strip mining is a very elementary way of mining coal, I do not think we would be asked for or make any recommendations. In New Brunswick we have made some, but there it is different, it is very complicated.

Mr. Skoberg: In line with the activities of your Board in the method of mining, does your Board accept any responsibility for the terrain of the country that is left after the strip mining?

Mr. MacNaught: Oh no, that is a provincial matter.

Mr. Skoberg: Have you done any research on the difference in costs per ton of coal in strip mining as compared to shaft or...

Mr. MacNaught: Oh yes, it is very much cheaper.

Mr. Skoberg: Have you an estimate?

Mr. MacNaught: It varies from mine to mine. I could not give you the over-all estimate.

Mr. Skoberg: Then in your estimate, have you, and would you, include the reclaiming of the land at the same time. It is simple enough to say that we will strip the land and take the coal, however, to reclaim the land what estimate would you come up with?

Mr. MacNaught: We would have to work that out, I would have no estimate now.

Mr. Skoberg: Now, in your opinion then, it is strictly federal or provincial legislation that governs the reclaiming of the land after the strip mining operation, is that correct?

Mr. MacNaught: That would be provincial, in my opinion.

Mr. Skoberg: There has been no research from your Board on this.

Mr. MacNaught: From our Board, no. On strip mining the Mines Branch has done some.

Mr. Skoberg: Well, I did note that you mentioned federal funds have been allocated to the Kootenay and the coal mining there for the British Columbia-Japanese market right at this time; is that correct? Did you not mention that a short while ago?

Mr. MacNaught: A subvention but not money for research.

Mr. Skoberg: A subvention is paid with federal funds?

Mr. MacNaught: Oh yes, a subvention is paid with federal funds.

Mr. Skoberg: Do you know, in view of the federal funds that have been allocated for the subvention, whether there is any regulation that these companies must reclaim the land?

Mr. MacNaught: No, because it is only very, very recently that any strip mining methods have been used for the mining of coal for that market. Only recently has that been done. In Coleman they have strip mined some but mostly up to the present time it was from shaft mining. Now a change has taken place, and Kaiser Coal Limited are going to produce a large amount of coal by a strip mining method.

Mr. Skoberg: Of course, we are aware of the fact that in Estevan country and the Galahad and Forestburg country strip mining is "the" method now.

Mr. MacNaught: Oh, yes.

Mr. Skoberg: And there is no reclaiming going on there whatsoever in so far as the terrain is concerned, is that correct?

Mr. MacNaught: No restoration.

Mr. Skoberg: That is right.

The Chairman: Yes. Mr. McCracken?

Mr. McCracken: The actual physical mining of the coal is entirely under provincial jurisdiction, the regulations of mines and so on. Whether reclamation goes on would be, I think, entirely a provincial matter.

Mr. Skoberg: I suggest it is unfortunate that it is under the hands of the provincial legislation, because, as you have suggested, by 1990 we will need every resource that we have and we will not have any country left in so far as this area is concerned.

Mr. Brown: I would like to clarify the matter of the restoration of the land. That point has been raised by us with each of the companies receiving subvention aid, and the other companies out there, and they all have plans to restore the land. It will be an item of cost. It will cost a little bit less in Estevan than it would, say, in a mountain strip. It all depends how much, but there is a full intent, a realization, that the land must be reasonably well restored. It is not going to be complete, but enough so that it is no longer an eye sore.

• 2130

Mr. Skoberg: I think it is a little late in the Estevan country. Anyway I have another question, Mr. Chairman, and I realize we have a vote coming up shortly although not on this one. In this book here I notice that your professional and special services are referred to and in actual expenditure for 1967-68 are \$71,000?

Mr. MacNaught: That is right.

Mr. Skoberg: Did this include the research and the amount of money that you allocated to the universities in Canada?

Mr. MacNaught: Yes, that is right.

Mr. Skoberg: Do you hire any consultants or special services?

Mr. MacNaught: We did, yes.

Mr. Skoberg: Do you tender or are they by invitational bid?

Mr. MacNaught: Yes, tender.

Mr. Skoberg: How do you tender? What method do you use and how far throughout Canada do you put your tender out?

Mr. Brown: We get the advice of qualified people of the federal government in that field; this was a metallurgical field. We get the qualified metallurgists of the federal government to advise us of the number of firms who are qualified, then tenders are obtained from these firms.

Mr. Skoberg: I suggest that is invitational then, this is not an open tender.

Mr. Brown: Correct, that is right.

Mr. Skoberg: Do you undertake any research to find out whether there are additional people available in this particular field for the service that you require in the Dominion Coal Board other than what the federal government gives you?

Mr. Brown: We do inquire from people in that discipline, metallurgy or whatever it is, to advise us who is who in Canada in this particular field and which are the better firms? We do get that.

Mr. Skoberg: Have you done any research into Slurry pipeline method of transporting coal?

Mr. Brown: No, but we are connected with it through the work being done in Alberta at the moment.

Mr. Skoberg: At the University of Alberta?

Mr. Brown: That is right.

Mr. Skoberg: How much money have you allocated to the University of Alberta through your Board for that research?

Mr. Brown: None for that purpose.

Mr. Skoberg: Have you had some consultation?

Mr. Brown: Not that we were against it.

Mr. Skoberg: Have you had some consultation with the people from Oklahoma in regard to Slurry pipelining? Are you aware of the unsatisfactory results they have had down there.

Mr. Brown: They are working with the group you mentioned in Alberta—not working with but keeping in close connection with; we do not. We kept touch with the still earlier 110-mile pipeline to Cleveland.

Mr. Skoberg: The one that was plugged there for a while.

Mr. Brown: Temporarily.

Mr. Skoberg: I have another point. Could you tell me why the United States is able to produce coal per ton cheaper than Canada at this time?

Mr. Brown: Because of geological conditions and favourable working conditions. I mean by that geological conditions.

Mr. Skoberg: Are they working conditions or geological conditions?

Mr. Brown: Working conditions are favourable because of the better geological structure of the field, it is easier to mine.

Mr. Skoberg: The terrain in the Galahad, Forestburg and Estevan country would, I presume, be similar?

Mr. Brown: The strip mines you mentioned at Forestburg are equal to the world's best in productivity. So is Saskatchewan's strip mine equal to the world's best in productivity and costs. Normally we refer to the underground mines of Nova Scotia as not being able to compete with the underground mines of the eastern United States because of the more favourable physical conditions of the United States mines.

Mr. MacNaught: One is submarine mining.

Mr. Skoberg: I will not take any more time, Mr. Chairman. Mr. MacNaught, has any consultation been carried out with the transportation companies as to rail lines for unit train operations from British Columbia to Toronto and likewise in the further East area?

Mr. MacNaught: They are just beginning.

Mr. Skoberg: Are there unit trains at this time coming from the Pennsylvania fields to Toronto?

Mr. MacNaught: No, because it crosses the lake on a barge.

Mr. Skoberg: On barges?

Mr. Brown: By self-unloading vessels.

• 2135

The Chairman: I have on the first round list Mr. Hymmen and Mr. Lind and then I assume that the next four are supplementary questions; Mr. Sulatycky, Mr. Hymmen, Mr. Aiken and Mr. Deakon. Am I assuming correctly that the remainder are supplementaries?

Mr. Hymmen: Mr. Chairman, Mr. Skoberg was pursuing a line of questioning concerning strip mining that I wanted to ask Mr. MacNaught. This has been a matter of some contention on our news media and there are many, many Canadians who abhor the destruction of a natural resource which is irreplaceable, that is the Rocky Mountains. On the other hand, I can see the importance of metallurgical coal to the Japanese and also

the importance to our export market. The question I was going to ask Mr. MacNaught has already been answered and he said that in this opinion this was entirely a provincial responsibility. To your knowledge, Mr. MacNaught, has there been any legislation introduced by the Province of British Columbia regarding the procedures to be followed, the precaution to be taken in overburden and the actual reclamation, the assurance of reclamation, in regard to these areas which are being mined.

Mr. MacNaught: I understand that very serious consideration is being given to the passing of such legislation.

Mr. Hymmen: Do you consider this as important a matter as I do?

Mr. MacNaught: We consider it a very important matter. The terrain of our country is very important.

Mr. Hymmen: Thank you.

The Chairman: Mr. Lind,

Mr. Lind: Before I move to another subject, I have one further question about strip mining along the Rocky Mountains. How big are these holes? Are they a mile or two miles wide, and two miles deep, or how big are these strip mines?

Mr. MacNaught: In width I suggest they would be about a quarter of a mile wide and the overburden to be removed in the Rocky Mountains would run sometimes as high as 400 to 500 feet.

Mr. Lind: Limestone?

Mr. MacNaught: No, sandstone mostly.

Mr. Lind: Sandstone. When removing this overburden do they not place it in previous excavations?

Mr. MacNaught: They try to, yes.

Mr. Lind: How many miles of face are they destroying of the Rocky Mountains? Would it be one-tenth of 100 per cent of the face of the Rocky Mountains that they are destroying or how much?

Mr. MacNaught: I would imagine it would be much, much greater than that, an infinitesimal amount.

Mr. Lind: You mean that percentage wise it would be greater than that?

Mr. MacNaught: Greater than what you mentioned; smaller, I mean smaller.

Mr. Lind: Smaller, all right. Actually they are not going to do too much damage to the area?

Mr. MacNaught: I think that is a matter of opinion.

Mr. Lind: I saw some of them and I did not see where there was too much damage to the area.

I would like to move on to other questions now. You have seen the sand and gravel quarry operation outside of Hamilton or Dundas where they are moving out limestone, or perhaps at St. Mary's Cement Co., Limited, where they are quarrying out a big hole and have been for years; are the people kicking much about these types of operations where they know that a natural resource is being mined for the benefit of all the area?

Mr. MacNaught: In the particular areas that you mentioned we certainly have had no complaints.

Mr. Lind: But you have had complaints about the Rocky Mountains have you?

Mr. MacNaught: The complaints we have had were newspaper clippings forwarded to us by interested people.

Mr. Lind: Going back to the Cape Breton coal mine, since DEVCO took over these mines have they increased the consumption by using their own Cape Breton coal for the steel operation?

• 2140

Mr. MacNaught: Last year they were down to 100,000 tons of Sydney coal to be used for making coke in the Sydney steel works. This year the estimate is 400,000 tons.

Mr. Lind: Are they blending that with coal from the United States?

Mr. MacNaught: I understand they will always have to blend about 20 per cent American coal with the Sydney coal to make proper coke.

Mr. Lind: Then they are importing roughly 200,000 tons.

Mr. MacNaught: They are not yet up to the maximum they can use. I think eventually

they hope to get up to about 700,000 tons of Sydney coal, back to the market they had about 15 years ago.

Mr. Lind: Is this mainly because of the sulphur content?

Mr. MacNaught: The only reason they are able to go back to it is because they found, through experiments carried out by the Dominion Coal Board, that the sulphur can be taken out economically and reduced to an acceptable level.

Mr. Lind: Are they recovering the sulphur they remove?

Mr. MacNaught: No, it is of no value.

Mr. Lind: It is of no value at all. What is the total tonnage again—I did not quite catch you there—of coal used in the Sydney steel mill?

Mr. MacNaught: It is about 700,000 tons.

Mr. Lind: About 700,000 tons and eventually they will be using all but 20 per cent of that of their own coal?

Mr. MacNaught: That is the hope.

Mr. Lind: You said that the subvention went off as of April 1 of last year?

Mr. MacNaught: That is right, of 1968.

Mr. Lind: Who is paying it to them now?

Mr. MacNaught: The DEVCO will ship the coal and if they have a deficit at the end of the year I presume the deficit will be looked after the way any deficit of a Crown corporation is looked after by Parliament.

Mr. Lind: Is this through another vote that we are advancing \$20 million a year for phasing out this mine and the steel operation?

Mr. MacNaught: DEVCO estimates will come before another committee. I do not believe it comes before this Committee. I think it comes before one of the other committees and they know the facts, we do not. Since April 1, 1968, as I said, we have had nothing whatever to do with the mines in Sydney, with the exception that we are carrying out with the help of the audit services branch of the Comptroller of the Treasury a final audit to determine if we owe them any further money or if they have been overpaid.

Mr. Lind: We do not know what subvention is paid by the federal government at the present time?

Mr. MacNaught: It will not be in the form of a subvention, it will be a deficit, if anything, or they may be showing a profit, I do not know.

Mr. Lind: Is there any future hope of increasing the amount of Nova Scotia coal used by Ontario Hydro?

Mr. MacNaught: I think not because the subvention is \$9 a ton. I cannot conceive of it being reduced much below that.

Mr. Lind: Is it all because of the distance they have to mine to bring this coal to the surface?

Mr. MacNaught: Largely, but there is the other factor that it costs more money to produce a ton of coal in Sydney than it does in a competitive area in the United States.

Mr. Lind: Is this the labour cost or machinery cost?

Mr. MacNaught: It is transportation cost. You must remember that they are mining coal four to five miles under the Atlantic Ocean. They haul it back to the surface, up the slope and up the shaft, and that contributes substantially to the cost.

Mr. Lind: Thank you very much, Mr. Chairman.

• 2145

Mr. Aiken: Mr. Chairman, on a point of order. We are going to have to be running away from here in a few minutes and I think we should decide whether we can complete the Dominion Coal Board tonight and pass the estimates or whether we are going to hold them over. As far as I am concerned, having had my round I am happy to pass but this is a matter for the Committee.

The Chairman: Thank you Mr. Aiken. I have Mr. Sulatycky, Mr. Hymmen and Mr. Deakon on my list. Mr. Aiken has passed. Is every one willing to pass?

Mr. Harding: I have a couple of questions I would like to ask, Mr. Chairman. I would like some information although I do not want to hold the vote up particularly. My question is in connection with research again. I wonder if the Board has done any research into the by-products of coal. There are always by-products in all these...

Mr. Brown: May I answer that?

The Chairman: Yes you may, Mr. Brown.

Mr. Brown: No, the Board has not. The work in by-products has been well pursued in the United States and in Europe and with regard to that we prefer to keep in touch with this other work rather than try to duplicate it in Canada. The by-product end of it is quite sophisticated and quite costly. We have been favouring the more practical one of better combustion, better use metallurgically and so forth.

Mr. Harding: Is there not an extensive field in the by-products from coal?

Mr. Brown: There is.

Mr. Harding: Some countries, I understand, have fairly large industries based on coal by-products.

Mr. Brown: There are countries, particularly in Europe and Japan, who have these composite firms based mainly on the greater use of their tars. However, if you are going to make a by-product it is much better to start from oil or gas, rather than from coal. This is just a hard fact of life.

The Chairman: If the Committee is willing then I will put the question.

Item 75—agreed to.

The Chairman: Thank you very much gentlemen. I want to thank the officials for being with us this evening. This meeting is adjourned.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

ON

NATIONAL RESOURCES
AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 17

TUESDAY, APRIL 1, 1969

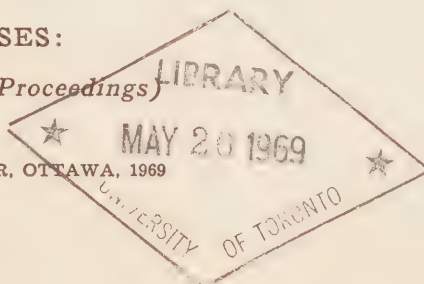
Respecting

Main Estimates 1969-70 of the Atomic Energy Control Board.

WITNESSES:

(*See Minutes of Proceedings*)

THE QUEEN'S PRINTER, OTTAWA, 1969



STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

Aiken,
Beaudoin,
Chappell,
Code,
Deakon,
Harding,
Langlois,
^a Legault,

Lind,
¹ Marchand (*Kamloops-
Cariboo*),
Moores (*Bonavista-
Trinity-Conception*),
⁴ Muir (*Cape Breton-The
Sydneys*),
² Orange,

Paproski,
Ritchie,
Skoberg,
Whicher,
Whiting—(20).

(Quorum 11)

J. H. Bennett,
Clerk of the Committee.

Pursuant to S.O. 65(4)(b)

¹ Replaced Mr. Sulatycky, March 31, 1969.

² Replaced Mr. Badanai, March 31, 1969.

³ Replaced Mr. Roy (*Timmins*), March 31, 1969.

⁴ Replaced Mr. Comeau, March 31, 1969.

REPORT TO THE HOUSE

TUESDAY, April 1, 1969.

The Standing Committee on National Resources and Public Works has the honour to present its

THIRD REPORT

Your Committee recommends that it be granted leave to adjourn from place to place within Canada, accompanied by the necessary staff.

Respectfully submitted,

LEONARD HOPKINS,
Chairman.

MINUTES OF PROCEEDINGS

(Text)

TUESDAY, April 1, 1969.
(17)

The Standing Committee on National Resources and Public Works met this day at 11.08 a.m., the Chairman, Mr. Hopkins presiding.

Members present: Messrs. Beaudoin, Chappell, Code, Deakon, Hopkins, Hymmen, Langlois, Legault, Lind, Marchand (*Kamloops Cariboo*), Orange, Paproski, Skoberg, Whiting—(14).

Witnesses: From the Atomic Energy Control Board: Dr. G. C. Laurence, President; Dr. D. J. Dewar, Chief Scientific Officer; and Mr. E. M. Nolan, Senior Administrative Officer.

The Chairman read the Fifth Report of the Subcommittee on Agenda and Procedure.

Your Subcommittee met Thursday, March 27, 1969 with the following members present: Messrs. Beaudoin, Comeau, Hopkins, Hymmen and Langlois.

After discussion, the Subcommittee agreed to make the following recommendations:

1. That the Atomic Energy Control Board invited to appear before the Committee April 1, 1969;
2. That more Committee meetings be held in the evenings if possible;
3. That the Acting Minister of Energy, Mines and Resources be invited to appear before the Committee April 15, 1969;
4. That the Committee seek permission to adjourn from place to place within Canada, accompanied by the necessary staff.

The Chairman announced a meeting of the Subcommittee on Agenda and Procedure for Wednesday, April 16, 1969.

On motion of Mr. Deakon, it was *resolved*,—

That the recommendations of the Subcommittee on Agenda and Procedure be adopted.

The Chairman called Items 55 and 60, Estimates 1969-70, Atomic Energy Control Board and the President, Dr. G. C. Laurence introduced his associates and read a statement.

Dr. Laurence was then questioned, assisted by Dr. Dewar and Mr. Nolan.

Item 55—Administration Expenses of the Atomic Energy Control Board—\$500,000Carried.

Item 60—Grants for researches and investigations with respect to atomic energy—\$5,400,000Carried.

At 12.25 p.m., the Committee adjourned to the call of the Chair.

J. H. Bennett,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, April 1, 1969

• 1110

• 1107

The Chairman: Gentlemen, we have a quorum. We have the fifth report of the subcommittee on agenda and procedure which met on Thursday, March 27, 1969 with the following members present: Messrs. Beaudoin, Comeau, Hopkins, Hymmen and Langlois. The Committee discussed agenda and procedure. After discussion your subcommittee agreed to make the following recommendations. (1) That the Atomic Energy Control Board be invited to appear before the Committee on Tuesday, April 1, 1969. (2) That more Committee meetings be held in the evening if possible. (3) That the Minister of Energy, Mines and Resources be invited to appear before the Committee April 15, 1969. (4) That the Committee seek permission to adjourn from place to place within Canada accompanied by the necessary staff, and a further steering committee meeting will be held on Wednesday, April 16.

May I have a motion to adopt this report.

Moved by Mr. Deakon, seconded by Mr. Hymmen.

Motion agreed to.

I shall now call Items 55 and 60 of the Estimates, 1969-70, Atomic Energy Control Board.

ENERGY, MINES AND RESOURCES B—ATOMIC ENERGY CONTROL BOARD

55 Administration Expenses of the Atomic Energy Control Board (Details, page 77) \$500,000

60 Grants for researches and investigations with respect to atomic energy \$5,400,000

Total \$5,900,000

The Chairman: I invite the president, Dr. G. C. Laurence, to introduce his associates and address the Committee. Gentlemen, could I invite you to sit up at the table. Dr. Laurence.

Dr. G. C. Laurence (President, Atomic Energy Control Board): Mr. Chairman and honourable members, may I first introduce my colleagues: Dr. Donald Dewar, immediately to my right, who is our senior scientific adviser; and next to him, Mr. E. Nolan, who is the head of our office administration.

Items 55 and 60 concern the expenses of the Atomic Energy Control Board. Before I go any further, Mr. Chairman, I think perhaps it might be worthwhile to emphasize, in order to avoid a very common confusion, the difference between the Atomic Energy Control Board and the two other federal government agencies which are active in the general area of atomic energy.

Turning first to the others, there is Atomic Energy of Canada Limited, which is a Crown company, a large company which is concerned with research and development in the atomic energy field, and to this end operates the establishments of which you have heard—Chalk River, Pinawa and so on. It also markets certain products containing or using radioactive materials. I stress again that this is a body whose main function is in the realm of research and development. It has been mainly responsible for leadership in fundamental atomic energy research and for the research and development leading to the Canadian heavy water reactor concept.

The other Crown company is Eldorado Nuclear Limited, which is engaged in mining uranium and thorium and in the processing of these materials to various stages and in research and development in this area; that is to say, the improvement of mining processes and the processing of this uranium. It is also engaged in the processing of zirconium, a material which has particular applications in the atomic energy field.

The Atomic Energy Control Board is mainly a regulatory body. It is not itself engaged in research, but it is an agency through which the federal government does give support to research in Canadian universities. The Board

was set up in 1946 to enable Canada to control dealings—and that is a term which is defined in our Act—in atomic energy materials and equipment and to enable her to participate effectively in any measures of international control of atomic energy.

The Board's role is the administration of the Atomic Energy Control Act. This involves mainly two responsibilities:

(1) The administration of the licensing and inspection services set up under the Atomic Energy Control Regulations to ensure that

(a) Canadian atomic energy materials and equipment are used for peaceful purposes;

(b) Canadian users have adequate training and facilities to use the materials and equipment effectively; and

(c) Canadian users are unlikely to cause health and safety hazards through their operations.

(2) The other responsibility, as I mentioned earlier, is assistance to Canadian universities and other organizations to enable them to carry out research and investigations with respect to atomic energy and to train the scientists and engineers required for future atomic energy operations in this country.

Administration of the Board's Licensing and Inspection System

In our submissions funds are requested for the administration expenses of a permanent staff of 39 employees, 3 standing advisory committees (The Reactor Safety Advisory Committee; The Reactor Operator Examination Committee; The Accelerator Safety Advisory Committee) and a number of ad hoc safety committees which advise the Board on the safety aspects of proposed large-scale atomic energy projects. To avoid duplication, the Board makes use wherever possible of

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advice and inspection services already available in federal and provincial departments—particularly those of health and labour—but has found it necessary to provide specialist officers in its own staff in the fields of reactor safety, accelerator safety, transportation of radioactive materials, safety in operations involving enriched uranium or plutonium, as well as in the field of international safeguards.

In the safety field special mention may be made by way of illustration of the new nuclear power generating stations; The Pickering Nuclear Power project near Toronto, which comprises four reactors with a total generating capability of 2,000 megawatts and which is now in an advanced stage of construction; the Gentilly Nuclear Power Station, with a power rating of 250 megawatts, now under construction near Trois-Rivieres, Quebec; and the proposed Bruce Nuclear Establishment, near Kincardine, Ontario, which will have four 750 megawatt reactors and a heavy water plant. The safety aspects of these units are requiring close attention and study on the part of the Board's Reactor Safety Advisory Committee and the Board's officers.

On the subject of safeguards, may I interpolate here, Mr. Chairman, a little explanation of our office jargon. When we speak of safety we are thinking mainly of protection of public health; when we talk about safeguards we are usually talking about international arrangements to ensure that nuclear materials are used for peaceful purposes only.

On the subject of safeguards, Honourable Members are, of course, aware that Canada has late last year ratified the Non-Proliferation Treaty. If this treaty goes into effect it will mean that all Canadian atomic energy activities will be subject to International Atomic Energy Agency inspection to ensure that they are directed towards peaceful purposes only. Board officers will, however, be expected to accompany the international inspectors as liaison officers and to provide the IAEA with periodic reports.

In preparing for its responsibilities under the Non-Proliferation Treaty, the International Atomic Energy Agency is relying heavily on the advice of safeguards officers from countries like Canada who have practical experience in safeguards operations. Indeed, if the International Agency is satisfied with the effectiveness of the Canadian safeguards operations, it may well decide to monitor the Board's present safeguards activities rather than set up a complete inspection service for Canadian operations.

Grants for Research and Investigation

The Atomic Energy Control Board, as authorized by the Atomic Energy Control Act has, since its inception, assisted some 11 Canadian universities to enable them to carry

out atomic energy research and development and to purchase and operate major items of atomic energy equipment. Vote 60 is also intended to continue this support.

Of the total amount (\$5,400,000) shown in the vote for Grants in Aid of Research, \$2,900,000 is to provide for support of the TRI-UMF (Tri-University Meson Facility) Project approved by the government last year. This project, which now involves the joint participation of four universities—not three—(University of Alberta; University of British Columbia; Simon Fraser University; and University of Victoria) involves the design, construction and operation of a 500 MeV proton spiral ridge cyclotron for use as a research tool in the developing field of intermediate energy nuclear physics. This is the reason for the substantial increase which you may notice over the amount (\$3,920,000) shown in the revised estimates for the fiscal year ending March 31, 1969.

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That is a brief glimpse of our activities, Mr. Chairman. My colleagues and I will be most happy to give any further explanations we can.

The Chairman: Thank you, Dr. Laurence. On behalf of the Committee I would like to welcome you and your officials here this morning. I have on the list for questioning Mr. Legault. I am prepared to accept other names at this time, but meanwhile I will call on Mr. Legault.

Mr. Legault: Thank you, Mr. Chairman. I have one question which refers to part of the statement given by Dr. Laurence.

Dr. Laurence, would you say the Board is satisfied that Canadian atomic materials sold in the past have been used for peaceful purposes?

Dr. Laurence: Yes, sir.

Mr. Legault: You are satisfied that this is so?

Dr. Laurence: We are satisfied. I should correct that because my mind is on the present situation. Prior to 1955, under contracts with the United Kingdom and the United States, we were supplying uranium for military purposes. One of these contracts extended into the period beyond that time, but at that time the Prime Minister, Mr Pearson,

announced the policy that in all future contracts the uranium would be used for peaceful purposes only, and we are satisfied that that is the case.

Mr. Legault: This is prior to what year, Dr. Laurence?

Dr. Laurence: 1965.

Mr. Legault: 1965.

Dr. Laurence: I said 1955, but it is 1965.

Mr. Legault: Thank you.

The Chairman: Mr. Skoberg.

Mr. Skoberg: Thank you, Mr. Chairman. Dr. Laurence, further to that question, what were the terms and conditions of the sale of uranium to France which seemed to be of some considerable concern to many people?

Dr. Laurence: This question was put to the Hon. Mitchell Sharp, and he replied on Monday, September 30, 1968. This was a question of the sale not of natural uranium but of irradiated uranium from Canadian reactors. Mr. Sharp said:

This agreement provides for the application of EURATOM safeguards, and for procedures whereby Canada may obtain assurance that the Community's safeguards and control system is satisfactory and effective for any material transferred under the agreement from Canada to the member states of EURATOM.

Mr. Skoberg: You are quite satisfied, as mentioned in the previous question, that the safeguards are definitely built in there so far as the use is concerned.

Dr. Laurence: Yes.

Mr. Skoberg: In regard to the grants to the universities, who determines the qualification of the various universities to partake in any program that may be desired at any particular time?

Dr. Laurence: There is a small advisory committee of scientists, mainly chosen from the universities themselves, which reports not only to the Atomic Energy Control Board but also to the National Research Council on all grants which are in support of research in the area of nuclear physics, which has been the main area supported by the Board. The reason for setting up a joint committee—I mean

joint in the sense that it reports to both of these agencies—is that the National Research Council also has given some support in this area and we wish to make sure that the same standards are maintained. This committee is comprised of scientists with wide recognition for their competence in the field and we rely very heavily on their judgment.

Mr. Skoberg: Is this a cost-sharing program with the universities involved? I notice on

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page 4 of your submission, Dr. Laurence, you refer to the universities here that are involved in this particular project and I wondered whether or not there is money allocated by those universities along with the National Research Council or the other bodies to partake in this.

Dr. Laurence: In general this reflects a long-standing policy, both on the part of the National Research Council and ourselves, that generally speaking the universities would provide the building accommodation and the ordinary operating services, light, janitor service, power, that kind of thing. The breakdown which you see there, as I say, is a reflection of that practice, applied in particular to TRIUMF.

Mr. Skoberg: What other universities are receiving grants at this time insofar as your program is concerned? Are they pretty general. Is there a long list?

Dr. Laurence: There are about ten or eleven of them.

Mr. Skoberg: Are they fairly representative of the provinces throughout Canada?

Dr. Laurence: They have been in the past. University of Alberta, University of British Columbia, Laval University, University of Manitoba, McGill University, McMaster University, University of Montreal. For the University of Ottawa and Carleton University, there is a joint grant. Queen's University, University of Saskatchewan, University of Toronto, and the University of Victoria.

Mr. Skoberg: Do you allow any financial assistance to individual students? Do you have a program set up for this type of assistance?

Dr. Laurence: The Board has not made grants to students as such. Application for the

grant is made in the name of a senior scientist in the university, and the grant is made in his name in the sense that he has responsibility for the use of the funds.

Mr. Skoberg: And the determination for that grant is by the same committee that you mentioned previously?

Dr. Laurence: Yes. It is the same grants that I am talking about.

Mr. Skoberg: Dr. Laurence, how much investigation is carried out as to the carrying of the radio-active material as between rail and highway traffic? I understand that you do carry out investigations in regard to the handling of radio-active material. What you have found in regard to the safety measures involved with the rail and highway traffic? I use those two as comparisons.

Dr. Laurence: Dr. Dewar is very close to this. If I may, I would ask him to answer the question.

Dr. D. J. Dewar (Chief Scientific Adviser, Atomic Energy Control Board): Mr. Chairman. There are of course federal regulatory authorities in the field of rail, sea and air and the Board has been providing expert advice to them. There is no regulatory authority in the field of road transport, either federal or provincial, for any dangerous materials. The Board has stepped in so far as the radio-active materials are concerned and we are acting as the regulatory authority. Most radio-active materials, the short-lived things are transported by air. There is a growing tendency for the very large shipments to move by road. This is the chief reason we entered the field until there is a decision as to what regulatory body is going to take over dangerous goods by road.

Mr. Skoberg: Have you found any problems with the various provinces having different regulations with regard to highway traffic?

Dr. Dewar: So far, Mr. Chairman, there is essentially no provincial regulation. I think Ontario requires labelling of vehicles, and I think Alberta has required that information be provided on proposed shipments. There are no other provincial regulations in this field at all.

Mr. Skoberg: In your opinion, do you consider that highway traffic is as safe as rail traffic in the transporting of this radio-active material?

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Dr. Dewar: I think we would like to have somebody looking at transport of all dangerous goods, not only radio-active; I mean all dangerous goods, because this is rather open at the present time. We are really moving on the people who are making the shipments, who are our licensees, and we can impose conditions on methods of packaging and so on. This has been a very reasonable situation. We are also providing the advice to the other regulatory bodies so that there is a uniform standard being adopted across the country.

Mr. Skoberg: You deal with the highway traffic boards in the various provinces, do you?

Dr. Dewar: We have been sort of notifying them of what is going on. For the time being, we are making the decisions on the road.

The Chairman: Mr. Chappell.

Mr. Chappell: I have some general questions for Dr. Laurence. I see this year, for university research we shall be spending about \$5.5 million. How does that compare with the expenditures for university research in the past 10 years?

Dr. Laurence: It has been gradually rising. If it would be helpful, in answer to the question, I can give you the total of the AECP grants to universities during the last five years: 1963-64, \$900,000; the next year, \$1,250,000; the next year \$1,600,000; in 1966-67, \$2 million; and in 1967-68, \$2,500,000. Then there was an increase because TRIUMF came into the picture.

Mr. Chappell: What was the total for the last five years up until this year?

Dr. Laurence: The total for 1963 to 1968 was \$8,250,000.

Mr. Chappell: Therefore, there is a substantial increase this year over the rate?

Dr. Laurence: Yes, that is right.

Mr. Chappell: Is all atomic research done at the university level, or is some carried out by private industry under the guidance of your Board?

Dr. Laurence: Our Board makes grants only to universities. There is some research carried out in industry through contracts from Atom-

ic Energy of Canada Limited. I do not know the details on this.

This might be a question to put to Atomic Energy Control Board when they appear before the Committee.

Mr. Chappell: Do you have any idea how much it involves in dollars?

Dr. Laurence: I would hesitate to venture a reply to that question, Mr. Chairman. I am sure that when AECL are here they can give you a better idea than I can.

Mr. Chappell: Is there any carried out by any government agency at its own site, such as at Chalk River?

Dr. Laurence: In this field I cannot think of any other research carried out by a government agency that is not done by Atomic Energy of Canada Limited or Eldorado.

Dr. Dewar has suggested to me that possibly the Department of Energy, Mines and Resources do some under their own Vote. I know it is certainly true that in the earlier days the Mines Branch carried out a substantial amount of investigation of such things as uranium ore treatment.

Mr. Chappell: Do you know whether any other department other than Energy, may be doing some research on their own on the use of atomic energy?

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Dr. Laurence: A small amount of research is no doubt being done in the Department of Agriculture; and I should think also in the Department of National Health and Welfare, involving the use of radioactive materials in small amounts, as a tool in research.

Mr. Chappell: I take it that in the Department of Health and Welfare it is for medical purposes.

Dr. Laurence: I would presume so, yes. Also, of course, the medical profession uses radio-active materials in medical research on the treatment of disease.

Mr. Chappell: Is there any research carried out jointly on any projects with the United States, either at the university level or at the departmental level?

Dr. Laurence: Not that I have knowledge of.

Mr. Chappell: Who, if anyone, keeps track of the various projects at the different universities, industries and departments?

Dr. Laurence: I have described to you how the grants supported by the Board are investigated by an advisory committee. The two other agencies in the field, Atomic Energy of Canada Limited and Eldorado Refining, would certainly have knowledge of the areas that interest them.

Mr. Chappell: Is there need for one body to catalogue what is going on at all these different places relative to atomic energy to avoid duplication and repetition in some aspects of the research?

Dr. Laurence: I think the only area in which this question could be important would be in the support which the National Research Council and the Atomic Energy Control Board give to research in atomic energy in the universities; and as I explained to you, there is a very close co-ordination there by making use of the same advisers.

Mr. Chappell: Who knows whether the University of Alberta is not now duplicating, at least to some extent, the same work that was carried out at McMaster University two or three years ago? Who knows that for certain?

I am not trying to criticize your Department. I am trying to search for information, Dr. Laurence.

Dr. Laurence: I appreciate that, and I am trying to understand the question and its implications.

Mr. Chappell: I have heard it said that we need some giant computer to tell us immediately what is going on at Harvard, at California, at Alberta, at McMaster—what is going on everywhere—to avoid duplication and unnecessary waste in research in all of North America.

Dr. Laurence: This question of duplication is frequently raised by those who are not scientists. I often wonder just what they have in mind.

I would remind the Committee that research is a kind of search, and two searchers are better than one. Therefore, I do not get a clear picture of what it is you fear when you raise the bogey of duplication.

There is a natural factor, which tends to the avoiding of duplication, in the scientist's

natural desire to build up a reputation for himself as a leader in his field and for originality. This clearly steers him away from anything he thinks the other man might be doing. Also, if he is at all a good scientist he is well aware of what is being done in his own field in other places, hardly so that he may learn from what is being done there but also so that he may avoid following somebody else who has made an important discovery.

But there is also a virtue in some duplication because we are in a field where any new discovery certainly raises questions about the assumptions which have gone into its interpretation; and it is highly desirable that there be duplication to make sure that this important discovery really does have the significance that is attributed to it.

Mr. Chappell: I have heard it said and, in fact, I have read in certain scientific publications, that some person starting out to do research on certain fields of atomic energy could not, within five years, read all the publications put out. He could not read them all himself, so he has no means of finding out whether or not it has all been done before.

What I am asking is whether it is up to us, in this Committee, or some other branch of government, to say that all of these things

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should be catalogued on a computer so that we can go and speak to the computer and find out what is going on and what has happened in the past?

Dr. Laurence: It is certainly true that science is now becoming extremely complex, and the number of scientific workers is getting to be very large, but the important things in any area become known, if they are important at all, and the scientists themselves are on the watch for these developments. They are the people who are best equipped, through their training, experience and their knowledge of the field to know where to look for the possibility of a duplication and to avoid it.

Perhaps I should here come back and refer again to our visiting committee, the committee which investigates the grants which we make. They are a visiting committee. This means they go out and they visit the scientists and they talk to them, and in this way they have a pretty good idea of everything that is

going on in this area in Canada. They are, as I mentioned earlier, very good scientists in their own field and they have a pretty good grasp of what is going on abroad.

Therefore I have great confidence in them, to watch out for this kind of duplication. In fact, I have seen them give warning to one of our supported scientists, calling his attention to something which they had happened to see which this scientist had not. I do hope, however, that you would not put your trust in a computer to do the job which only the human mind can do.

Mr. Chappell: No, the position I am making is that only a computer can do it. Someone has to catalogue all the research that has taken place and put it in the storage knowledge of the computer so that someone who is in charge of all the research, at least in Canada, can say: "Wait a moment, before you proceed on that, you had better check what has been done at Laval, McMaster or somewhere else." This would then be available, and each scientist would not have to have a staff to study all these magazines to see what was done. What I am after is, should we, or should some department of government set up this library? Call it a computer library of stored knowledge of what has been done in the past, so that people may immediately be directed to the history of the subject they are researching?

Dr. Laurence: Yes. There is a publication known as *Nuclear Science Abstracts*. I am a little uncertain at the moment just who is responsible for supporting it financially, but it does attempt to catalogue all publications in the nuclear science areas. Also recently the International Atomic Energy Agency has been preparing itself to take on a part of this chore. It will involve, as your suggested, the use of computers.

This is a kind of thing which has to be done if it is to be useful at all on a fairly international scale. There is, as I say, this provision for it. I think it is important that in efforts of this kind Canada gives support to it, and that means an effort on the part of Canadian scientists to make sure that their contributions are summarized in a way which these international cataloguing devices can handle.

Mr. Chappell: Mr. Chairman, have I used up all my time?

The Chairman: You have used up all your time, Mr. Chappell, but I just have Mr. Marchand and Mr. Hymmen on the list after you. I might ask Mr. Lind too. Could you finish as soon as possible?

Mr. Chappell: All right. The National Research Council is also involved in this, is it not?

Dr. Laurence: Yes.

Mr. Chappell: Is there any liaison between your directives and theirs as to what each university should do?

Dr. Laurence: There is through this joint advisory committee. Both organizations lean heavily on the advice of these experts, and the same experts are advising both, so that we do have that very effective liaison. Of course we consult with them. Quite frequently I speak on the telephone to Dr. Schneider.

Mr. Chappell: Which university, if any, has been named to research the isotopes from the moon soil which the Americans expect to bring back this year?

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Dr. Laurence: If, as and when materials are brought back from the moon, I am sure there will be a demand on interested scientists who have competency in this field to do research on them.

Mr. Chappell: I know the National Research Council have already given their blessing to McMaster University.

Dr. Laurence: To do research on it?

Mr. Chappell: To get 20 grams of this 20 pounds of moon soil that is supposed to be returned this summer. Is that all National Research Council, or would you people be in on that too?

Dr. Laurence: We have not been involved at all. The interest here, I expect, is not in the field of atomic energy development. Probably it arises mainly from—and here I am merely guessing, because I do not know the details—it could very well be of major interest of the astronomers.

Mr. Chappell: Thank you.

Mr. Marchand (Kamloops-Cariboo): I have a few questions, Mr. Chairman. I am very pleased to see the western universities, par-

ticularly those from British Columbia, so heavily involved in this project, in the research which is called TRIUMF. Where will this 500 MeV proton spiral ridge cyclotron be constructed?

Dr. Laurence: It will be constructed on the campus of the University of British Columbia.

Mr. Marchand (Kamloops-Cariboo): Is there any particular reason why it is being constructed there, other than perhaps the availability of the scientists to do the particular type of research?

Dr. Laurence: The group who were most active in promoting it were there themselves. That probably was a factor, but it seems to be from the point of view of convenience and so on a suitable centre. I might remind you also that originally the supporters of this project were three Province of British Columbia universities

Mr. Marchand (Kamloops-Cariboo): And Alberta?

Dr. Laurence: It was only later that Alberta came into it.

Mr. Marchand (Kamloops-Cariboo): In what capacity is Alberta participating in this project?

Dr. Laurence: The scientists from the University of Alberta will make use of the facilities. And to the extent that they are able to raise any funds from any other sources, I know it would be their wish to contribute in the supply of equipment for it.

Mr. Marchand (Kamloops-Cariboo): Were there any other factors involved in the consideration of this, say climatic or environmental factors of any type that contributed to its location in British Columbia, or doing this work in British Columbia?

Dr. Laurence: No, this site was suggested, and all the supporters seemed happy with it. We had no reason to support any other. Climatic conditions, as far as I know, were not a factor.

Mr. Marchand (Kamloops-Cariboo): I just wondered about this.

Dr. Laurence: That might raise differences of opinion possibly.

Mr. Marchand (Kamloops-Cariboo): Perhaps it makes a difference to researchers, but

I wondered if perhaps it might have some relationship to this type of research. I have been working in ecology too long, I guess.

I was also wondering about the division of particular types of research work say between the university and that done by Atomic Energy of Canada Ltd. Does the university give them the pure research and Atomic Energy of Canada perhaps works more along the applied lines of research?

Dr. Laurence: The research which has been done through our grants in the universities has been mainly pure research, as you would call it, fundamental research, with some exceptions. Atomic Energy of Canada Ltd. has a very productive group of fundamental scientists on their staff. They of course are the ones who have been proposing the ING project. But mainly their work is in the field of applied research and development. They do not give support to universities for fundamental research. The only way that they are giving any support to the universities has been in a few cases where they have contracted with the university to deal with some

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problem. That kind of problem, where they would contract with the universities to study, could better be described as development than as research, in that the objective could be clearly defined.

Mr. Marchand (Kamloops-Cariboo): Thank you.

The Chairman: Have you finished, Mr. Marchand? Mr. Hymmen?

Mr. Hymmen: Mr. Chairman, I have a few general questions for Dr. Laurence. This committee is faced, as are other committees, with the question of timing. We have the annual report for 1967-68 before us. Had we had Dr. Laurence and his colleagues a month later we would probably have a more up to date report.

Could Dr. Laurence tell the committee, or give us some general information, about the sales of uranium and related products which were approved during the year 1968?

Mr. Chairman, if this is going to cause too much difficulty...

Dr. Laurence: No; it is just that I have to find the right piece of paper. Perhaps I might speak from memory on this, Mr. Chairman. At the present time, as I recall, contracts have been signed covering something like 44-

700 tons of uranium, of which about 7,600 is Canadian; 21,000 Japanese; 14,000 United Kingdom; 1,600 I think for Germany; and a small amount for Sweden. In certain cases some preliminary negotiations were done in 1967, but I think these contracts were essentially all signed last year; and some of the UK ones are continuations of earlier contracts. But this would give you an idea. I think the contracts were for roughly 45,000 tons

Mr. Hymmen: Mr. Chairman, this is an interesting point. I specifically asked about it because in last year's report a United Kingdom contract was mentioned, and two other smaller ones. I consider this important information.

The previous report referred to the stock-piling program. Could you give us some information on that?

Dr. Laurence: Mr. Chairman, I think it would be more appropriate to put that question to Energy, Mines and Resources, who are most directly concerned with the administration of that policy, or to Eldorado Mining and Refining.

Mr. Hymmen: We can do that later, Mr. Chairman. I was interested in the physical details of the policy and the program.

My next question relates to the International Atomic Energy Agency. I probably should address it to the Secretary of State for External Affairs. What, roughly, is the actual participation, financial and otherwise, in this Agency, and what Canadian personnel are directly involved?

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Dr. Laurence: I do not remember the exact amount of the total budget of the International Agency, but it is in the neighbourhood of \$10 million. The Canadian contribution to that, again from memory, is about 2.8 per cent.

Mr. Hymmen: And to what extent were personnel from your Board involved last year in inspection and other matters relating to this agency?

Dr. Laurence: The International Agency has its own inspection organization. Our experts have participated in conferences and discussions which were instrumental in formulating their policies and practices in safeguarding.

Canada has always played quite a part in discussing the administrative details of this organization. From its start, the Canadian ambassador in Vienna has been one of the members of the Board of Governors of this agency. In fact, Canada is regarded as what they call a permanent member of the Board of Governors who are from some 20-odd nations. Some of them are permanent, like Canada, and others are rotated.

Canadian scientists frequently take part in scientific discussions sponsored by this organization. Our own officers have given support, as scientific advisors, to our Department of External Affairs in discussions of a political nature in the meetings of the Board of Governors, as well as the large body, the General Conference of the International Atomic Energy Agency.

Mr. Hymmen: I have one final question, Mr. Chairman. I notice under Vote 55 that there is some increase in personnel and in the budget relative to the personnel. Is this normal expansion because of the other nuclear establishments starting up, as, for example, the Bruce one?

Dr. Laurence: This kind of expansion, not only in our domestic Atomic Energy Development program but also in the international field—of safeguards and so on—has been expanding so rapidly that we have always been dragging a bit behind and felt short on staff because we had not foreseen how rapidly this expansion would take place.

Mr. Hymmen: With the non-proliferation treaty now being signed and the future of the world involved I think we should pull our weight in this connection. Do you not agree?

Dr. Laurence: I certainly agree. Canada has considerable prestige in international affairs. Anyone who has been in our position of working at the elbow of our external affairs officers particularly appreciates the weight of the Canadian voice. Canada's achievements in the atomic energy field have been a big factor in building up that prestige.

Mr. Hymmen: Thank you, Mr. Chairman.

The Chairman: Mr. Lind?

Mr. Lind: Thank you, Mr. Chairman. Dr. Laurence, is the heavy water plant on the Bruce Peninsula near Kincardine causing any pollution of Lake Huron?

Dr. Laurence: There should not be. It will be one of our responsibilities to make sure that there is not.

Mr. Lind: If there is a serious explosion, or some catastrophe there beyond your control, what methods have you for safeguarding the people of the area?

Dr. Laurence: This is one of the problems which very much concerns our officers and advisors. For this reason the design of that plant will be carefully studied with this consideration very much in mind.

In the meantime, the design of the nuclear power station at Douglas Point, as you know, has been under review by our advisors and

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our staff from the very beginning to ensure that it is a safe plant and is operated safely. We can give you that assurance on the Douglas Point plant which is now completed. We are carrying out a similar study, which is only now beginning, with regard to the details of the design of the nuclear power station which will be part of the Bruce complex. One of the factors that will have to be taken into consideration in considering the safety of the Bruce nuclear power station will be its proximity to the heavy water plant.

Mr. Lind: Dr. Laurence, are the safety factors and health standards that you set up all controlled by Atomic Energy of Canada Limited?

Dr. Laurence: When I speak of reviewing the design of these plants to be sure that they are acceptably safe, we are guided by international standards with regard to permissible exposure of the public and of operating staff, and by the well-accepted rules of good engineering practice.

Mr. Chairman, I am not sure in some of these questions whether I really am replying to the intent of the question. There is a problem always of communication and I hope that if the members are not satisfied that they insist on getting what is responsive to what they ask.

Mr. Lind: What I am concerned about is that should an accident occur and some of these nuclear reactors escape, what precautions can we take to protect the health of the people of the area? That is the thing that I am concerned about.

Dr. Laurence: The first protection is in preventing the accident. In the case of a nuclear power station, first of all, the design of the basic plant is examined to make sure that it does not introduce features which lead to the likely breakdown of equipment in a way which might invite the escape of dangerous materials. Secondly, the plant is provided with certain safety devices which come into play to make sure that the operation of the plant is stopped promptly in a dangerous situation. And thirdly, the plant is built in an enclosure which is intended to restrict the escape of these dangerous materials if you do have a coincidence of breakdown of equipment and a failure of the protective devices, should that inconceivable event occur. Even if there is a failure of the devices to prevent the dangerous consequences, you have the further precaution of containment measures, a building which is designed to prevent free escape of air, gas, steam, that might carry radioactive material with it.

Mr. Lind: Then you can say, Dr. Laurence, that you have taken every precaution that is humanly possible to avoid accidents that might endanger the health of the people of the area?

Dr. Laurence: I am not sure I would claim that we have taken every precaution humanly possible because that always has a dollar mark on it. We have taken such precautions that we do not regard atomic energy plants as particularly dangerous. In fact, if I may venture a personal prejudice in this regard, I think that a modern, well-designed, nuclear power station is less a menace to the health of the people nearby than a coal-fired power station of the same capability when you bear in mind the tons and tons of toxic gases pouring out into the atmosphere.

Mr. Lind: Thank you very much, Mr. Chairman.

Mr. Deakon: Thank you, Mr. Chairman. Dr. Laurence, could you please tell us how Canada ranks with other atomic energy producing countries in the production of atomic energy materials?

Dr. Laurence: In the production of atomic energy materials we are second to the United States on the scale of uranium production—second in the “free world”. I am being corrected here; we do not know what is happening exactly beyond the “iron curtain”.

Mr. Deakon: And what percentage of atomic energy material which we produce do we export.

● 1205

Dr. Laurence: May I have the question repeated? I am not quite sure of it, sir.

Mr. Deakon: I was 'wondering, Dr. Laurence, what percentage of the atomic energy materials produced in Canada are exported?

Dr. Laurence: The figures which Dr. Dewar gave you a little while ago regarding our contracts last year...

Dr. Dewar: I think Canadian use would be something around 15 per cent to 20 per cent and the rest would be exported.

Mr. Deakon: I see. What controls does the Board exercise over the use of radio isotopes?

Dr. Laurence: One cannot procure a radio isotope from a Canadian supplier or import it without an order from the Board—a licence.

Mr. Deakon: You have to have a licence.

Dr. Laurence: Yes.

Mr. Deakon: Do you also licence particle accelerators?

Dr. Laurence: No, not at present, shall I say.

Mr. Deakon: I have one last question, Dr. Laurence. What is the estimated cost of the Pickering nuclear power project?

Dr. Laurence: I think I had better leave that question to be answered by Atomic Energy of Canada Limited.

Mr. Deakon: Thank you.

Mr. Orange: I have one question I would like to ask Dr. Laurence just for clarification. In your regulations under prospecting, prospectors are required to report any finds or estimated finds?

Dr. Laurence: Yes.

Mr. Orange: Dr. Laurence, you could just give us a little background on why this regulation is there? There have been suggestions that possibly it should be changed and provincial authorities control it, and whether or not it is an effective thing considering the

kind of activity that goes on in Wollaston Lake area at the moment?

Dr. Laurence: The reason for that requirement is to ensure that the government has knowledge of Canadian uranium reserves which, of course, is important because of the great military importance of this material. What was the second part of the question?

Mr. Orange: There has been some suggestion, I think, that this be transferred to the provincial departments of mines because they are in a much better position to enforce it than the Director of the Geological Survey. Has there been any action on this at all, or is this just a sort of a newspaper discussion?

Dr. Laurence: I think it is a newspaper discussion.

Mr. Orange: And the third point really is how effective is this particular regulation?

Dr. Dewar: Mr. Chairman, I think I might say that as a result of this the Geological Survey has said that it has more information on the subject of uranium and thorium in Canada than any other mineral. They only wish they had some other people who would do the same. This gives them a very good picture of the whole situation. They, in turn, of course, are passing this to the provincial authorities. This is essentially information collecting so that they know the potential in the country. The Geological Survey was picked as it was the logical body; it has all this information in the country.

The Chairman: Thank you, Mr. Orange. Those are all the names I have on the first round. I have Mr. Marchand on the second round and Mr. Skoberg has just indicated that he would like to continue. Mr. Marchand.

Mr. Marchand (Kamloops-Cariboo): Yes, I have only a few questions, Mr. Chairman. In connection again with the cyclotron, how far along has the development of this thing gone and when do you expect it to be completed?

Dr. Laurence: It is a little difficult to know how to answer a question as to how far along is the development. Perhaps as good a way as any is to say that it developed sufficiently far that there is no doubt about the ability of the people there to bring the construction and operation of this plant to a successful conclu-

• 1210

sion. I am not sure that is really answering the question, is it?

Mr. Marchand (Kamloops-Cariboo): Well, I was wondering whether you could tell us when it might be completed so they can start doing the research with it.

Dr. Laurence: It is about a five-or six-year project.

Mr. Marchand (Kamloops-Cariboo): Is it in its second year now?

Dr. Laurence: On that basis, I would regard this as its first year because it is four or five years ahead of schedule.

Mr. Marchand (Kamloops-Cariboo): What is the total cost? I notice a note here that you have earmarked \$2.9 million for grants in aid of research for the support of the TRIUMF. Will this be the total cost or will this just be the vote for this year, and we will have to vote additional amounts in the years to come for this project? I know we undoubtedly will have to vote grants for continuing research but I was just wondering what the total cost of this particular project was going to be.

Dr. Laurence: The exact total cost is a figure which depends a bit on how you define the term "capital cost" in this regard, but it is in the area of \$20 million. This will involve expenditures which will fluctuate from year to year, depending on the stage to which the work has progressed. Expenditures will range between \$3 million and \$5 million in any one year. After it comes into operation, it will cost something of the order of \$4 million to \$5 million each year to go on with its operation.

Mr. Marchand (Kamloops-Cariboo): Will we contribute to its operation every year?

Dr. Laurence: Yes.

Mr. Marchand (Kamloops-Cariboo): Could you elaborate a bit on the intermediate energy nuclear physics? I am thinking more of what the objectives are that we have in mind for the cyclotron. What are some of its uses to society, if you like, or what good is it going to do the common man on the street?

Dr. Laurence: Our understanding of atomic fission—that process by which we release energy from nuclear matter—has been acquired very largely from experiments in which fast atomic particles have been used to

bombard materials. In the beginning they used fast particles from natural sources, such as radium, but gradually accelerators were brought in to provide a better control of these particles, better control over their energy and so on, and they have made a very important contribution in extending our knowledge.

It has made it possible to study large areas of the subject matter shall I say, of the nucleus of the uranium atom, but there are other areas which can only be explored by faster and even faster particles. This accelerator in British Columbia will be applicable there. There is no other accelerator in Canada that can meet that need, nor is any accelerator anywhere elsewhere in the world being applied on the scale that this can be used for that purpose.

• 1215

Now, that area can be described as intermediate nuclear physics. With the improvement of these accelerator devices, the scientists were able to carry out experiments they were never able to do before and they began to discover new kinds of subatomic particles, such as mesons and others with other names. This has led them to building these very, very powerful machines—the very high energy accelerators—to enable them to extend the search for these mysterious particles farther out into the great beyond, if you like.

In the interest that they have in this kind of new discovery, they have left a lot of detailed investigation on the wayside and there is a need for coming back to intermediate energies, particularly with regard to the mesons which were the first of these peculiar particles that were discovered, and doing a much more detailed investigation of their properties. That can best be done in this intermediate energy range and this accelerator is particularly suitable for that purpose. It would give to Canadian scientists for once, if not the first and best tool for this purpose, at least one with two or three others in the world.

For once, Canadian scientists in the field of nuclear physics are not tagging far behind because they do not have research equipment that can compete with scientists in other nations. This, of course, is extremely important to them, because it was just because Canada had the NRX reactor and the NRU reactor when the rest of the world began to

catch up with NRX as a research tool that Canadian scientists in atomic energy have established such a reputation for themselves.

As I hinted earlier, this has been a big factor in giving weight to Canada's voice in political discussions abroad when atomic energy matters arise for discussion. Again, I am not sure that I am answering your question.

Mr. Marchand (Kamloops-Cariboo): Yes, that is part of it. Now, I suppose it is a little academic to be thinking in terms of practical application of this type of research in the intermediate energy field, but could you perhaps tell us, or speculate on, what some of its practical uses might be?

Dr. Laurence: Here again we are faced with the old question of knowing where fundamental research is going to lead us. The only thing that we have seen time and time again is that it leads to developments eventually, but you have to have the knowledge before you know how you can use that knowledge. It is self-evident that until you know certain facts you cannot know what you are going to do with them.

Mr. Marchand (Kamloops-Cariboo): Yes, in this field of pure research certainly it is a little difficult to go beyond that. I guess it is one of the fundamental differences between pure research and applied research or developmental research.

Dr. Laurence: May I say in that context it will, I am sure, in the hands of Canadian scientists—good Canadian scientists, and we have good ones—extend our understanding of the structure of the uranium atom and our understanding of this process by which energy is releasable from it, and if there is not a technical application to that it will be a strange thing.

Mr. Marchand (Kamloops-Cariboo): Thank you very much, Dr. Laurence.

The Chairman: Mr. Skoberg?

Mr. Skoberg: Dr. Laurence, I am just wondering what need your Board would have for professional and special services. I see you have an item provided for that in Item 55. What professional or special services do you use at this time?

• 1220

Dr. Laurence: We are a very small organization as you can see from the size of our

budget; in fact, we are a staff of only 39. We lean very heavily on all the relevant expertise that we can find. This means that from time to time we have occasion to call on consultants; generally we can get this without a charge on our budget through the co-operation of other federal and provincial government departments, but that is part of the area that has to be covered. There is also appearing on the horizon a need for the development of special instrumentation and this may well become of quite some importance in the next year or two, to assist our safeguard inspectors.

Mr. Skoberg: Would I be correct in saying that it is really prorated from another department to your department whenever you use the services of these special consultants?

Dr. Laurence: This is for nongovernment. This is not a matter of prorating. This is where there is a direct charge on us because it is not a government service that we can call on on a co-operative basis.

Mr. Skoberg: There is another one I was wondering about. I see you have utilities, materials supplies and livestock. What do you use livestock for? This is in this book here that we have.

Dr. Laurence: I am a little puzzled by this because we certainly do not use livestock. It may be that what you are reading there is a general title in which the Board's activities are only included in respect of a particular item. Could this be it?

Mr. Skoberg: The original estimates do not have the livestock in but in this form that we have been given livestock is included. I was just wondering what use you might be making of it.

Mr. E. M. Nolan (Senior Administrative Office, Atomic Energy Control Board): That is one of the objects. There used to be 30 some objects and now there are only 13, I believe, and that is one of them. This covers our materials, supplies and so on. We have to name the full title of the object.

Mr. Skoberg: Possibly if you had a dash between the "live" and the "stock" it would not be quite so difficult.

Dr. Laurence, you suggested in your brief to us that "if this nonproliferation treaty goes into effect" and my question is: Which department is negotiating with the other countries to bring this treaty about?

Dr. Laurence: The Department of External Affairs of course is the department.

Mr. Skoberg: Do you have some of the people from your Board on the negotiating end of this particular treaty?

Dr. Laurence: We support them with the necessary scientific advice that they require. They call for advice of course from many other federal departments and agencies.

Mr. Skoberg: You have no idea how far this treaty has advanced in the negotiation stage?

Dr. Laurence: I am not sure whether I am up to date in my numbers, but somewhere

between 80 and 90 have signed and eight countries have ratified, including Canada.

The Chairman: I have no further questions on my list.

Items 55 and 60 agreed to.

The Chairman: That completes the estimates of the Atomic Energy Control Board of Canada. I want to thank Dr. Laurence and his officials for being with us today.

Our next meeting will be April 15, the first Tuesday after Easter, at which time the Acting Minister of Energy, Mines and Resources will appear before us and give the opening statement for that Department. This meeting is adjourned.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 18

TUESDAY, APRIL 15, 1969

*Respecting*Main Estimates (1969-70) of the Department of Energy,
Mines and Resources

APPEARING:

The Honourable Otto E. Lang, Acting Minister of
Energy, Mines and Resources.

WITNESSES:

(See Minutes of Proceedings)

THE QUEEN'S PRINTER, OTTAWA, 1969

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and Messrs.

Aiken,	Harding,	Murphy, ¹
Beaudoin,	Langlois,	Orange,
Chappell,	Legault,	Paproski,
Code,	Marchand (<i>Kamloops-</i>	Ritchie,
Comeau,	<i>Cariboo</i>),	Roy (<i>Timmins</i>), ²
Deakon,	Moore (<i>Bonavista-</i>	Whiting—(20).
Gilbert,	<i>Trinity-Conception</i>),	

(Quorum 11)

R. V. Virr,
Clerk of the Committee.

Pursuant to S.O. 65(4) (b)

¹ Replaced Mr. Lind on April 14, 1969.

² Replaced Mr. Whicher on April 14, 1969.

MINUTES OF PROCEEDINGS

[Text]

TUESDAY, April 15, 1969.

(18)

The Standing Committee on National Resources and Public Works met this day at 11:10 a.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Beaudoin, Chappell, Deakon, Gilbert, Harding, Hopkins, Hymmen, Langlois, Legault, Marchand (*Kamloops-Cariboo*), Murphy, Orange, Paproski, Roy (*Timmins*), Whiting—(15).

Appearing: Honorable Otto E. Lang, Acting Minister of Energy, Mines and Resources.

Witnesses: From the Department of Energy, Mines and Resources: Dr. C. M. Isbister, Deputy Minister, Mr. J.-P. Drolet, Assistant Deputy Minister (*Mineral Development*), Mr. G. M. MacNabb, Assistant Deputy Minister (*Energy Development*), Dr. A. T. Prince, Acting Assistant Deputy Minister (*Water*).

The Committee had for consideration the Estimates of the Department of Energy, Mines and Resources for the year ending 1970.

The Chairman called vote 1 and introduced the Minister, who in turn, introduced the officials of his Department. The Minister then made an opening statement regarding the objectives and terms of reference of the Department and, assisted by his officials, responded to questions thereon.

The Minister agreed to provide additional information to the Committee regarding the establishment of National Advisory Committees that will be working with the Department.

Item 1 was permitted to stand.

At 1:00 p.m., the Committee adjourned until 8:00 p.m., Thursday, April 17, 1969.

R. V. Virr,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, April 15, 1969

● 1109

The Chairman: Gentlemen, I see a quorum and I would like to call the meeting to order. We have with us this morning the Honourable Otto E. Lang, Acting Minister of Energy, Mines and Resources.

First of all, I would like to call Item 1, on pages 54 and 57 of the Blue Book.

Departmental Administration and Special Supporting Services

1 Administration, Operation and Maintenance—\$6,120,000

I invite the Honourable Otto E. Lang, Acting Minister of Energy, Mines and Resources to address the Committee. Mr. Lang, will you please introduce your officials at the same time.

● 1110

Hon. Otto E. Lang (Acting Minister of Energy, Mines and Resources): Thank you very much, Mr. Chairman.

The Chairman: First of all, on behalf of the Committee I welcome them all here this morning.

Mr. Lang: Thank you, very much. I am delighted to be here as well and I thank you for your welcome. The senior officials of the Department are here to elaborate on details of the program and I would like to introduce them to you. Dr. C. M. Isbister, the Deputy Minister, is seated to my immediate right and next to him is Dr. Harrison, Assistant Deputy Minister in the Mines and Geosciences Section; next to him, Mr. J. P. Drolet, Assistant Deputy Minister in Mineral Development, followed by Mr. G. M. MacNabb, the Assistant Deputy Minister of Energy Development and Dr. A. T. Prince, Acting Assistant Deputy Minister in the Water Branch.

Here in the second row is Mr. J. C. Allen, the Senior Financial Adviser of the Department; down farther in the row is Mr. R. B. Code, the Senior Personnel Adviser and next

to him is Mr. Sutherland of our Legislative Section; in the rear nearest the door is Mr. Donoghue, the Public Information Officer for the Department.

We also have here, Mr. Chairman, a display of some of the materials produced by the Department and I am sure members of the Committee will be interested in looking at them. Of course, if any members would like to receive copies of any of the material put forth in this fashion by the Department they might just let us know and we would be delighted to supply it to members.

If I may, I would like initially to make an opening statement before we proceed into the detailed items in the estimates. May I say that I am glad to see that the new program activities form of estimates is available to the Committee members and I think it would be helpful to the Committee if they were to use these in examining the Department's program and budget proposals rather than the traditional Blue Book because the new form contains much more useful information. When the Department of Energy, Mines and Resources appeared before the Committee last year, the Committee, I understand, was provided with an abbreviated version of this new form and I believe the Committee found that very useful, indeed.

Now, then, gentlemen, if I may, I will proceed with my statement.

It is, of course, only five months since this Committee examined the programs and the 1968-69 budget proposals for this Department. It is my impression that on that occasion, the Committee gained a clear understanding of the broad purposes for which this new Department was formed in 1966. In my remarks today, therefore, I intend to build on that background and set the stage for as detailed as discussion of Departmental objectives, goals and priorities as the Committee has time and inclination to pursue.

At the start we might note Canada's richness in natural resources, but we might also observe that other countries, also rich in resources, are less well off than Canada. We

can conclude that the existence of resources in the ground is not a complete assurance of prosperity. A mine, a river, an oil field is only a geographical fact until it has been developed for the benefit of society. It is also essential to have a highly trained corps of men and women capable of discovering the resources and of utilizing them effectively. The principal function of my Department is to develop, co-ordinate and promote national policies and programs with respect to mines and minerals, water, energy and other resources. In support of this, my Department has the very important responsibility to obtain and make available information about Canada as a country, about Canada as an economic and sociological unit, and about the technologies needed to develop its physical resources so that the initiative and capital of those engaged in utilizing and developing these resources can be employed in the interests of Canadians in the most effective way possible.

• 1115

While the Department is concerned with the whole of Canada, it takes a special interest in the North, in the oceans, and in underdeveloped areas generally, as particular areas where opportunities for activities beneficial to the country as a whole may still be unrecognized. The Department also takes a special interest in the renewable resources of Canada, particularly inland water resources. Many of its present programs of activity are concentrated on those lake and river systems contiguous to the major centres of population; for example, the Department is developing the Canada Centre for Inland Waters at Burlington on Lake Ontario as a focal point for multi-disciplinary research on problems associated with the Great Lakes, and particularly with pollution.

The principal concern of the Department is not gain, but opportunity. Opportunity for Parliament to enact wise and effective legislation on which to base federal activities towards the improvement of man's environment; opportunity for federal-provincial co-operation in water resources development and enhancement; opportunity for private industry to take advantage of new mineral processes and applications; opportunity for the promising and ambitious to fulfil their dreams and aspirations and thus to add to the intellectual and physical wealth of the country and opportunity to contribute to a research tradition for others to emulate and

to follow. The mineral wealth of the Canadian North will be made available to the nation through research leading to its discovery and exploration; indeed, the only real hope for a viable northern economy is in its minerals, fuels and water. The research now being initiated in the marine environment will surely lead, in the future, to our participation in the exploitation of the resources of the sea bed. Our competence in all fields in the earth sciences will enable our people not only to live more stimulating lives, but will enable them to offer help to less developed nations.

The mission of Energy, Mines and Resources and the mandate for its various activities are based upon the Government Organization Act 1966 and the Resources and Technical Surveys Act. In summary, the principal elements of the mission are:

1. The development, through data-gathering and research, policy formulation and planning, and the co-ordination of national effort, of a sound basis for the exploitation of: (a) mineral and other non-renewable resources, (b) water and renewable resources, (c) energy resources.

2. The provision of related services to the nation such as: (a) surveying and mapping, both terrestrial and hydrographic, (b) astronomy and deep-earth geophysics, (c) maintenance of a time standard, (d) administration of the Explosives Act, (e) compilation and publication of a variety of records and statistics on mineral production, stream flow, navigational information, and so forth.

3. The discharging of certain phases of the federal government's responsibilities for: (a) the administration, co-ordination and management of energy, mineral and water resources and of projects relating to these, (b) the subvention and distribution of federal funds for projects and industries in these fields.

The first two of these functions comprise activities of a scientific nature; the third in general does not, except where the funds are distributed in support of scientific activities.

A sound policy for the management of resources must be based on information which includes:

- (a) an inventory of known resources,
- (b) an understanding of the factors that determine the occurrence or creation of these resources, (c) intelligent forecasts of the demands and markets for the basic materials and their products, (d) knowl-

edge of the techniques involved in exploiting the resource, and appreciation of potential new techniques, (e) knowledge of the socio-economic system which must utilize air and water in a variety of ways.

The Department has been authorized to obtain this information through a wide range of surveys and research, and it is in this way the earth sciences agency of the federal government. Its programs cover a broad spectrum ranging through fundamental investigations of our natural resources and their environments, applied research on methods of finding and extracting resources, economic research on markets and potential demands, and interdisciplinary studies leading to the development of policies and plans for resource management.

• 1120

In order to maintain close liaison between the staff of the Department and the most interested and informed groups of the country, six national advisory committees have been established, each concerned with a major Departmental activity. The committees in the usual way include representatives of universities, industry, provincial governments, other federal departments and one or more senior officers of this Department. These committees serve the dual purpose of recommending programs which are in the national interest and of acquainting the community with the activities of the Department. They also review applications for grants-in-aid of research and recommend the disbursement of funds for this purpose.

I wish now to make a few comments related specifically to the proposals contained in the 1969-70 Estimates for each of the line programs of the Department. I would invite you to turn first to the Mines, Minerals, Energy and Geosciences Program, for which the activity details and explanations are set out on pages 16 and onward in the new form of the Estimates.

Do I presume correctly that everyone has the new form before them?

Mr. Gilbert: Mr. Chairman, some of us do not have the new form of the estimates and would appreciate receiving a copy. Do we have enough copies?

The Chairman: I think these were distributed to all the members of the Committee at the time. However, we have some others with us this morning who were probably not

on the Committee at the time. Apparently there are no other copies available this morning. Each member of the Committee at the time got a set. How many do not have these this morning? The officials are going to give theirs up to the members of the Committee. Is there anyone who is now without a copy?

Mr. Lang: I am beginning with Mines and Minerals, from page 16 onward in this new form of estimates.

The objectives of the Mines, Minerals, Energy and Geosciences Program are to determine the nation's potential mineral resources; to provide industry with the data required for the discovery, exploration and utilization of the nation's mineral deposits; to assist in the planning and development of these resources; to develop and co-ordinate programs for the development and utilization of the energy resources of the country; and to contribute to man's scientific knowledge of the earth and its contained minerals. To realize these objectives, the program supports and maintains a high level of research and related endeavour in the fields of surveying, mining, energy and the earth sciences.

In the Mineral Development Sector emphasis will be given to establishing a competent group of mineral economists to carry out long-range planning in mineral economics and mineral policy matters. This will be in keeping with the resource policy responsibilities given to the Department when it was reconstituted, and will provide a base for dealing effectively with major policy issues concerning Canada's increasingly complex and economically important mineral industry. Of course, it provides a basis for the orderly planning of programs in the technical branches of the Department.

I wish to dwell at some length on the new Energy Development Sector. This Sector pursues the broad mandate given the Department to examine energy from all its sources—coal, gas, oil, nuclear and water—to ensure that

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national development policies are related in the most effective and economic fashion to Canadian needs.

As the size and complexity of our energy industries increase to meet the rapidly expanding demands for power, there has developed an urgent need for a body responsible for the co-ordination of energy policy in the total energy context. Not only must the expansion programs for one energy resource

be developed in full awareness of the other energy supply alternatives, but the implications of such developments on other national and regional programs must be fully understood and reflected in government policy, and this is not a one-way street; we must at all times be aware of the far-reaching effect of federal fiscal and other policies on the energy industries of Canada; industries which in 1968 alone involved capital expenditures totalling over \$2.6 billion. This role of co-ordination of energy programs and policies rests with the Department of Energy, Mines and Resources.

In the area of electrical energy a joint federal-provincial study of power supply alternatives for the island of Newfoundland was completed within the past year. The final report on the Bay of Fundy tidal power studies is scheduled for June of this year, and a joint study with the United States of possible markets for Yukon River power has been initiated. These are examples of the activities of the Department in this field.

Currently, one of the principal activities relating to oil and gas relates to the responsibilities of the Task Force on Northern Oil Development. The Task Force, established by the federal government in December, is examining all aspects of oil exploration in the North, particularly the major discoveries in northern Alaska, in order to determine their implications for the Canadian oil industry and to advise the government accordingly. The Task Force is an interdepartmental group, chaired by the Deputy Minister of this Department, and it is proceeding with its assignment by conducting studies concerned with the feasibility of transporting northern oil by pipeline and by tanker, and by examining the marketing implications of major new sources of supply in the North. These studies will be the basis for a policy advisory paper prepared for ministers.

The Resource Administration Division of the Energy Sector is the federal agency responsible for administering all offshore mineral resources. The role of this Division is to provide a uniform system of resource management which will, in a manner consistent with the public interest, encourage and maintain a reasonably high level of investment in exploration work on a continuing and orderly basis and ensure that any reserves discovered by this exploration are delineated efficiently and economically. The Division also handles federally-owned mineral rights in the provinces that become available for disposition.

Our solid energy forms, coal and uranium, are also experiencing dramatic increases in demand. The Department has participated in the planning of programs to rationalize the coal industry of eastern Canada and has at the same time provided support to western coal producers in their efforts to establish overseas markets. The fact that the export program for western coal has been so successful results in no small way from the work of the Fuels Research Centre of the Mines Branch which has tested this coal and has proven its superior qualities as a coking-coal. The subvention program on western coal exports will be phased out as the large-volume contracts commence. There will be no subvention assistance provided after March of 1971. At that time over 10 million tons of coal will be exported yearly from western mines.

It is our firm expectation that the future demand for Canadian uranium will be no less dramatic. The tremendous expansion now forecast for nuclear powered generation in North America and Western Europe, as much as 300 million kw in the next 10 years, will result in greater production and greater exploration activity in Canada. At present this nation possesses approximately 30 per cent of the free-world's reserves of low-cost uranium; that is referring to uranium below \$10 a pound. There will be an increasing world demand for this resource and a continuing review of federal policies will be required to ensure that the maximum national benefit is realized.

• 1130

Let us proceed now to the Mines and Geosciences Sector and consider first the Field and Air Surveys, and similar activities. Here the Department will continue its attempts to meet the needs of the many agencies both federal and provincial, which depend on maps and surveys. Our efforts will be primarily in support of programs being carried out by these agencies and serious effects will follow if these needs are not met.

Geodetic surveys are basic to the production of good-quality maps and hence the development of resources to large engineering projects and to economic studies, and also to more accurate determination of the size and shape of the earth. Parameters determined from geodetic surveys are essential to research in geosciences.

The Topographical Survey in its dual role of establishing second-order horizontal and vertical control for mapping purposes and in

producing maps at various scales, will expand its operation in its efforts to meet the demands of federal and provincial agencies responsible for resource development. Many of these demands are new. Many are urgent, and large, and are additional to the requirements of National Defence and those of private organizations engaged in exploration work. Extensive research will, therefore, be continued in the Surveys and Mapping Branch to bring more automation to the mapping process so that it is in a position to put economies into effect at the earliest possible date.

The need for up-to-date air photography will continue, and many users now call for special scales of photography using special film and colour. The increasing awareness of the value and economy of using air photography has affected the number of special requests received by the Interdepartmental Committee on Air Surveys and indicates the degree of sophistication of resource studies. At the same time, the Surveys and Mapping Branch should provide for the receipt of photography from satellites in polar orbit which may be expected within two or three years.

Greater scientific effort is required if mineral exploration is to replenish reserves used by increased mineral production. While in Geological Research and Surveys the next activity on the list, we must not give up activities that are recognized as basic to the purpose; we must carry out further research that hopefully will result in alleviating mounting difficulties of mineral discovery and will sustain national mineral production.

Airborne methods are especially well suited to surveys of Canada's immense and under-developed domain as all parts of it can be reached readily, and systematic airborne observations and measurements carried out rapidly. Emphasis will be given by the Geological Survey to the development of instrumentation and techniques in the use of resource satellites and aircraft for remote sensing.

We might now turn to the Mining and Metallurgical Investigations and Research Activity. We would note some remarkable growth in Canada's total mineral production since 1945, which would not have been possible without the rapid advances in all phases of mining and metallurgical technology that have taken place, particularly in the last 20 years. At the same time, the intense exploitation of the country's minerals is depleting the richer deposits of non-renewable resources.

Consequently, future requirements in technology will be more stringent as it becomes necessary to treat lower-grade and more refractory ores, develop new markets for mineral resources not now economic, and tackle problems of increasing complexity in the mineral industries.

The solution to the problem of meeting future demands for products derived from Canada's minerals, fuels and metals will depend largely on how well research programs can produce accelerated technological advances that can be applied to the industry. The over-all objective of the Mines Branch, therefore, consists in ensuring a sound scientific base for the new technology, and in stimulating the application of advanced technology for the extraction, processing and use of minerals and fuels for the improvement of metal products.

In the next few years there will be great importance in the relocation of components of the Mines branch to a site on the Corkstown Road. These new laboratories are the result of a long-term policy to improve the facilities for conducting research to aid the Canadian mineral industry in a direct and practical manner.

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Research in Astronomy and Geophysics is our next activity. Canada, on account of its size and geographic location, has heavy responsibilities to the international scientific community in the field of geophysics. Work in gravity will see the acceleration of the gravity survey of Canada with a view to completing the reconnaissance gravity map of Canada by 1975.

In the field of seismology, the Canadian network and the Yellowknife array provide data for a vast amount of research. As geological studies advance, they require more and more detailed information about the earth's deep interior, and while the current studies do not provide immediate economic gains, they are very practical in the long-range sense.

While the objectives of the geophysical divisions are to maintain and improve their essential services, the discipline of geophysics is expanding so rapidly that this can be done only if the practical work goes hand in hand with research. It is, therefore an objective of the Observatories Branch to maintain the strongest possible research facilities in all branches of geophysics.

Similarly, we have major responsibilities in both optical and radio astronomy. These have been the subject of much discussion recently, but I am pleased that the universities and the Department have been able to reach agreement on the subject of astronomical research, a field that is fundamental to the study of the astronomical body on which we live. We plan to build up our competence and capability in astronomy at a more modest rate than was contemplated a couple of years ago, but we feel that Canada's excellence can be maintained.

The last two activities in this Program are overhead elements: the Polar Continental Shelf Project provides for coordination of departmental activities in the region of the Continental Shelf off our Arctic Coast; the Administration Item provides for the office of the Assistant Deputy Minister of Mines and Geosciences. It is worth emphasizing that this department's activities in the Arctic have largely been responsible for Canada's assertion of sovereignty there. All maps, topographic, geological, geophysical have been prepared as the result of our scientific and technical activities which began as long ago as the "Cruise of the Neptune" in 1902.

In the case of the Water Program, for which the activity display and explanations are set out on pages 24 and onward in the new form of the Estimates, I wish to address myself to the program as a whole rather than to individual activities.

Water is a dynamic resource, which ignores political boundaries. This characteristic of water, together with its many uses, makes it essential that water resource planning and development be on a comprehensive and on a co-operative basis. The federal government must provide strong leadership in the whole water field to ensure equitable resolution of conflicting uses, and maximum benefits to all Canadians.

Water pollution is an important concern in most large-scale water management problems and water pollution control must be considered an integral part of a management approach. Pollution is a real and rapidly growing menace to the quality of the Canadian environment. The federal government has particular responsibility for pollution abatement programs on international waters, certain interprovincial waters, and certain major intraprovincial waters which meet the oceans at large national harbours and ports. Pollution abatement programs can be most effec-

tively carried out as part of a comprehensive water management program in which the federal government participates as partner with the provinces, and in co-operation with universities, municipalities and industries. Water pollution research at the Canada Centre for Inland Waters is to include input from all of these sources. It is evident that comprehensive water resource planning and development requires a comprehensive jurisdictional approach. Since Canada is a federal state, in which the jurisdiction over water is now, and no doubt must in the future remain divided, there is a need to devise new legislative and institutional instruments to bring the jurisdictions together to focus on the major problems and issues. As I have said in the House, we

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intend to introduce the Canada Water Act before the end of the present session. This act will be an instrument providing for federal leadership and co-operative action across the full spectrum of water resource problems.

In recent years water has assumed greater importance in public policy and program. There are many reasons for this. The demands on our water resources both for supply to municipalities, to industry and to agriculture and for the disposal of effluents and waste, have grown at a phenomenal rate. Technology has greatly increased the range of alternatives to meet these demands and pressures. New demands and new technology raise the possibility of large-scale developments often beyond the technical and financial capacity of individual provinces and having regional and national implications beyond the jurisdiction of provinces. For example, the possibilities of major schemes for water export must be examined to determine whether or not they would be beneficial to Canada. Similarly, comprehensive management of the Great Lakes-St. Lawrence River system must be looked at in the light of developments in the United States portion of the system. New concepts of comprehensive, multi-purpose planning and regional economic development have emerged, concepts which require a co-ordinated interagency and inter-jurisdictional approach in water.

Some major water problems demand national attention because they are international problems. The Great Lakes as an example, situated in the heart of a great and growing concentration of population and industry with over 30 million people in the basin are probably the most important fresh

water bodies in the world. Because they are international water bodies, the federal government has important responsibilities through its treaty-making powers and under the Boundary Waters Treaty of 1909. Canada, the Provinces of Ontario and Quebec, the United States Government and eight states are involved in the complex and interrelated management problems of lake levels, diversions in and out of the basin, intra-basin diversions, navigation, pollution, water consumption and supply. This promises to be one of the most complex water management issues anywhere. It will require strong federal leadership in Canada as well as in the United States. Other vast river systems such as the Saskatchewan-Nelson extend across several provinces, and for this reason assume a national dimension.

Growing international concern over the eventual ownership of deep sea resources and the rapid expansion of industrial exploration of the mineral resources of the continental shelves have changed marine geology and geophysics from what was primarily an academic pursuit to one of immediate practical concern. Applied oceanographic studies are directed towards specific problems—physical features of marine environment affecting exploitation of off-shore oil resources, industrial, fisheries, transportation, coastal engineering and defence problems—and almost all improve our understanding of the mechanics of marine pollution.

Hydrographic charting of navigable waters provides the essential navigational information for the efficiency and safety of both commercial shipping and recreational boating. As a measure of the magnitude of this undertaking, Canada's oceanic coastline measures in excess of 117 thousand statute miles, surpassing the U.S.S.R. by 10 per cent and the U.S.A. by 250 per cent.

I hope these introductory remarks of mine, Mr. Chairman, have indicated to you the wide variety and range of Departmental activities throughout Canada's land, sea and sky. The Department's surveys, studies, explorations, research, plans and programs are all undertaken with one object in view, to give Canadians the greatest possible benefits from the water, mineral and energy elements of our national wealth.

The Chairman: Thank you, Mr. Lang. First of all, I would like to thank, Mr. Donoghue for the display of pamphlets which he brought to the meeting this morning. I am

sure if we read all of them we will be well informed on pollution. In reviewing a few of these I thought it would be a good idea if the Committee received a display such as this and I want to thank him for meeting our request.

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For the benefit of the Minister who is here this morning, I think I should mention before I call on questions that we have set tentatively the date of May 1 to visit AECL at Chalk River and Mr. J. L. Gray the President of AECL and Mr. L. R. Haywood, the Vice-President, are in full agreement with this date and are going ahead with their plans. I believe the Minister might be interested in coming along with us at that time.

An hon. Member: What day of the week will that be?

The Chairman: It will be on a Thursday.

Mr. Lang: If I may, Mr. Chairman, I omitted one matter. I would be delighted if I can to accompany you on that visit and I may say that there are other Departmental facilities nearby which I think the Committee indicated a year ago that they might like to see and you certainly would be welcome. You might be interested in the Mines Branch here in Ottawa in which, I gather, you were particularly interested in last year. The two sites, both at Booth Street and on the Corkstown Road and, of course, the Canada Centre for Inland Waters are matters of some importance.

I also would like to say that in the time ahead I hope to spend as much time with you as I can during the consideration of the Departmental estimates, but I failed at the beginning to mention that here with me, but also with you as member of the Committee, is the Parliamentary Secretary for the Department of Energy, Mines and Resources, Mr. Bud Orange, who is well known to all of you, I am sure, and who will also be with you. Certainly any time when I cannot be here he should be available.

The Chairman: Thank you, Mr. Lang. Your steering committee will meet this week, will decide on some of these other visits and will report back to you shortly.

I now would like to call on questions.

Mr. Gilbert: Mr. Chairman, before we get into the question period, maybe the Acting

Minister could tell us about the physical condition of the Minister, Mr. Greene, and shed some light as to when we could expect his return to the House and the acceptance of leadership in this important Department.

Mr. Lang: Mr. Chairman, I cannot give you a medical report on Mr. Greene. Mr. Greene is continuing the plan which was indicated in the press at the time of his latest illness. In accordance with his three month plan for recuperation, he has been able to get away to the sun in the south, is there at the moment and, presumably, will be for another week or 10 days. I expect at that time he may know more about his own position and his own timetable. I do not have a medical report, as such, to give you.

The Chairman: May I call on questions at this time?

Mr. Legault: Mr. Chairman, on a point of order, I do not know if this has any bearing whatsoever, but if the report is going to be printed according to the typed statement given by the Minister, perhaps a correction should be made on page 3 where the Minister said:

(a) mineral and other renewable resources...

but the statement reads:

...non-renewable resources,

Mr. Lang: Which page?

Mr. Legault: On page 3. It is written as "non-renewable", but was read as "renewable".

The Chairman: A motion is not necessary under those conditions, Mr. Legault. Thank you for bringing it to our attention. Mr. Chappell, you wished to ask a question?

Mr. Chappell: Thank you, Mr. Chairman, I have some questions by way of general information. It strikes me that the effect of the tundra or muskeg would be important in the development of the North in that you have to cross over it and build on it. I wonder, Mr. Lang, if your Department is responsible for that research or who carries on that research?

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Mr. Lang: Mr. Drolet, would you care to answer that?

Mr. J.-P. Drolet (Assistant Deputy Minister, Mineral Development, Department of Energy,

Mines and Resources): We do not do that kind of work in our Department, but the National Research Council has done a great deal of research and practical work on the reaction of permafrost with some success and these techniques have been used in the construction at Inuvik and other towns in the far North.

Mr. Chappell: I know some research has been carried out at some of the universities and I wondered if it had been done by your Department.

Mr. Lang: You mentioned...

Dr. C. M. Isbister (Deputy Minister, Department of Energy, Mines and Resources): Excuse me, sir, before you go on I wonder if I might add that in the Minister's comments he made reference to the task force which is now the interdepartmental task force under my chairmanship which is looking at the implications of the northern oil discoveries and the situation there. One of the important subjects we are trying to deal with inside the government in this connection is to co-ordinate all of the government's research and knowledge on northern construction, including problems of tundra and permafrost. There has been research in the National Research Council, but there are also bits of research and considerable experience in other government departments. From this point of view we are trying to make sure that it is all brought together, and in the course of doing this I am sure we will find gaps in our knowledge and that this will serve as a guide to other work that should be done.

Mr. Chappell: Would you expect the task force that is presently active to co-ordinate all the work that has been going on?

Dr. Isbister: That is right, sir. We are not doing research, but I believe that as part of the co-ordinating work we are doing on this subject that we will be taking a new look at this.

Mr. Chappell: May I ask you a further question on that? Approximately what area of Canada, considering all those northern islands, would be affected by permafrost and tundra? It would be substantially over 50 per cent, would it not?

Mr. MacNabb: I would guess that it would be somewhat larger than 50 per cent, sir. Somewhat less than 50 per cent probably would be in the continuously frozen ground

area, but there would be isolated patches of permafrost considerably farther south than the line of solid permafrost.

Mr. Chappell: Yes. Mr. Minister, you mentioned federally-owned minerals in the province. Would you explain that, please? I am not quite certain under what circumstances that would be.

Mr. Lang: There are a number of ways in which the federal government may still have title to minerals in the provinces, particularly if the ownership was not part of the massive ownership of minerals, say, when the minerals were transferred to the respective governments of the Prairie Provinces.

Mr. Chappell: Is this a substantial holding?

Mr. Lang: I do not think it could be called substantial. Mr. Drolet, would you be able to give an estimate?

Mr. Drolet: It is very minor. These are little patches of land here and there. For instance, historical sites which have been established by the federal government across Canada, where the mining rights still belong to the federal government. It is areas like this and national parks. It is very, very minor.

Mr. Lang: One other of importance that could be mentioned, I suppose, is the coal blocks in British Columbia although, of course, while it is clear to us that we own those, there is some dispute about it in other quarters.

Mr. Chappell: Is there any study going on with respect to small, portable atomic plants to be flown into these northern areas to create the heat and power and the whole service for a small community?

Mr. Lang: I do not know of any immediate plan to carry in small plants of this sort. The general research being carried on in Atomic Energy of Canada Limited would, of course, lead to the possibility of that kind of development.

Mr. Chappell: I take it at the present all their service and energy would come from oil or gasoline flown in?

Mr. Lang: Yes, although of course there are hydroelectric developments in the north as well.

Mr. Chappell: I was thinking in the sense of a new area that springs up immediately around a new mineral find.

Mr. Lang: Yes, I think that is essentially true.

Mr. Drolet: Barrels of oil: this is why when you travel in the north you see those thousands and thousands of empty barrels that are really an eyesore. What are we to do about it? It would cost a fortune to bring them back.

Mr. Chappell: I am very curious to know, just in a general way at this time, who is carrying out the survey in respect of the harnessing of the tidal power; what is the nature of the survey and the approximate cost, and when it might be expected to give its first report?

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Dr. Isbister: The organization doing this is an organization of three governments: Canada, Nova Scotia and New Brunswick. It is called the Bay of Fundy Tidal Power Programming Board. As the senior Canadian representative on this board, I act as chairman of it. There are other members of our Department and representatives of other federal government departments on it: for example, the Department of Public Works and other departments with relevant information to contribute.

The total budget of the Board is of the magnitude of \$2.5 million. The terminal date for the study program is June of this year. The Board has proceeded by setting up a studies office in Halifax that has had numerous meetings, and it has established an engineering committee. The Board has commissioned studies from leading engineering companies, mainly, but not entirely Canadian. The Bay of Fundy Tidal Power Programming Board has made a point of trying to consult people properly regarded as leading authorities on tidal power in the world, and we have reached out to such people in France and Britain. When the Programming Board makes its report to the three governments in June this will still be what I would call a preliminary report. It sounds very fancy but the works are huge and the problems very complex. When the work was started I put this to the press in terms that I thought the report would be in terms of a red light, a green light or a flashing orange light.

Mr. Chappell: In what countries are they already producing power from tides?

Dr. Isbister: On what you could call a commercial-industrial basis, France in "La

Rance" and that is the only one I know of. There are smaller experimental works in other countries. I am not sure if there are any in the U.S.S.R. Are there, Mr. MacNabb?

Mr. G. M. MacNabb (Assistant Deputy Minister, Energy Development, Department of Energy, Mines and Resources): The project that is being built in the U.S.S.R. is a small experimental project on the White Sea.

The Chairman: Mr. Marchand.

Mr. Marchand (Kamloops-Cariboo): Thank you, Mr. Chairman. On the old problem of the proposed diversion of Shuswap River into the Okanagan system, Mr. Lang, how far advanced are your plans to enter into an agreement with the provincial government of British Columbia to do a comprehensive study of the Okanagan's water needs?

Dr. A. T. Prince (Director, Inland Waters Branch, Department of Energy, Mines and Resources): Mr. Chairman, I might comment on this question. The matter of an agreement on the Okanagan-Shuswap and the Okanagan basin itself is in a very preliminary draft stage at the present time. We hope that we will be able to have a document prepared and cleared through the interdepartmental committee on water and up to Cabinet within a month or two. At the present stage of development it is in the very early negotiating stage with officials of the British Columbia government.

Mr. Marchand (Kamloops-Cariboo): When might the agreement be completed or ratified?

Dr. Prince: This is beyond my control. I would hope it might be within a couple of months time, but sometimes these things are quite slow in getting off the ground.

Mr. Marchand (Kamloops-Cariboo): Have you any idea once you have drawn up the terms of reference how long the study might take?

Dr. Prince: The study is likely to run on for perhaps two or three years. I might say in this connection that even in advance of an agreement which would be a binding agreement between Canada and the province, we are entertaining some preliminary field studies this summer as part of the joint programs or individual programs of federal government agencies, B.C. agencies and possibly some of the universities because there is a

need for physical information and data on the system there, particularly in relation to pollution. We hope that as part of the developing programs and even before such an agreement is signed that the gathering of some information can be started.

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Mr. Marchand (Kamloops-Cariboo): Where will this work be taking place?

Dr. Prince: A lot of the work will be field studies of the area itself and this, of course, would be supported by laboratory studies as required either in federal premises, provincial or university and perhaps even some consultants.

Mr. Marchand (Kamloops-Cariboo): How about cost? Will this be a cost-shared venture with the province or will we be picking up most of the tab?

Dr. Prince: I think this is contingent on the terms of the agreement and at this particular juncture I would not like to say too much about it. I think there is a general guideline, Mr. Chairman, in demonstration basins of this kind throughout the country that the federal government in principle has offered to share a substantial part of the cost, but the precise definition of this has not been arrived at and would not be until an agreement is negotiated.

Mr. Marchand (Kamloops-Cariboo): One of the things, of course, that the people in my constituency are concerned about is the possibility of a diversion and one of the stands that we have taken is that we want to see a comprehensive study done of the water needs of our area, as well—the area being served by the Shuswap-Thompson system. Have you had any discussions with the province relating to this aspect of the problem?

Dr. Prince: Any discussions that we have had so far with provincial officials, Mr. Chairman, were entirely of a preliminary nature in trying to mesh physical programs. The question of what would be done with regard to a comprehensive study, not only of the Okanagan, but the adjacent Shuswap area, I do not think has been fully worked out. Certainly in the preliminary thinking that we have of an agreement we must entertain some idea of the involvement of a diversion, how it would affect the people on both sides of the watershed and it is even more complex than between two adjacent basins in British

Columbia because diversion into the Okanagan would also involve us in an international relationship with the United States. Therefore, at this stage of the game I could not be at all definite about what might be undertaken in this respect, but it is being given consideration.

Mr. Marchand (Kamloops-Cariboo): I suppose the source of water to augment the Okanagan would be one of the major considerations in the study. Is this correct?

Dr. Prince: I would think that is correct, yes.

Mr. Marchand (Kamloops-Cariboo): You mentioned that there is an interdepartmental committee that is involved in water resources. Could you give us an indication of which departments are involved in this?

Dr. Prince: Mr. Chairman, could I have the question clarified? Do you mean the interdepartmental committee as a whole or relative to the Okanagan-Shuswap?

Mr. Marchand (Kamloops-Cariboo): Relative to the Okanagan-Shuswap primarily, but perhaps as a whole.

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Dr. Prince: I would be speaking from memory on this point, but I could give definite information if I referred to records. At the moment there is a working study group set up under the interdepartmental committee on water to look into the Okanagan demonstration basin. I do know that members of other federal departments include representatives from the Fisheries Department and from the Department of National Health and Welfare. There may be others, but I would be going on very vague memory to name them. If it is of interest to the member I would be quite happy to provide this information.

Mr. Marchand (Kamloops-Cariboo): I would like to have that information. Thank you very much, Mr. Chairman.

Mr. Gilbert: Mr. Chairman, I was quite surprised at the opening statement of the Minister this morning. I thought he had come forth in very bold terms with regard to a national oil policy, a pollution policy, a water policy and so forth. I found his speech this morning had sort of a Kiwanian luncheon flavour to it. I, therefore, am going to direct some questions to him. The first question, Mr. Lang, is with regard to the national oil policy.

When can we expect a statement on the national oil policy?

Mr. Lang: Mr. Chairman, the matters which were referred to by Mr. Gilbert, of course, were not included in the statement today because they are in the category of matters to be decided upon as government policy and to be announced in due course and that is exactly the answer to his question now, as he knows full well.

Mr. Gilbert: Mr. Lang, I notice that you devoted about 10 lines with regard to the oil policy on page 7 and most of it was with regard to the Task Force on Northern Oil Development while the last sentence in the paragraph related to the studies being available and prepared for the ministers. Do you think that these studies should be confined just to the ministers for policy or should they be made available to the members of this Committee so that we could become more informed on them?

Mr. Lang: Mr. Chairman, again, I think the ordinary policy—the very sound long-term policy—of governments in this matter is that very often confidential papers are prepared for the use of the government in arriving at policy decisions. Whether these confidential papers are then the subject of further scrutiny outside of the government itself is a matter for decision from time to time and generally the rule is against such revealing of the content. There are, of course, some famous exceptions to that rule. I might say that the brief reference to oil on page 7 to which Mr. Gilbert referred is not my statement of oil policy. I would like to say, Mr. Chairman, to members of this Committee that, of course, the estimates of the National Energy Board will also be coming before the Committee and many aspects of oil policy with which I am concerned in my present capacity really fall more clearly under the National Energy Board than under the Department as a whole. The Task Force referred to is one that cuts across a number of departmental lines and was referred to here really for that reason. It has a fairly special function and will produce a policy paper in relation to that function.

Mr. Gilbert: Can we expect a policy statement when the National Energy Board appears, Mr. Lang, with regard to the oil policy?

Mr. Lang: You cannot expect that statement if the government has not at that point

made the statement and I would tend to think, Mr. Chairman, that in a matter of this importance hon. members would expect that a major statement on the national oil policy would, in fact, be made in the House rather than to this Committee without any disrespect to the members of this Committee. After that, I am sure, there would be ample opportunity for the members of this Committee to review the matter in detail.

Mr. Gilbert: In the interim, Mr. Lang, have you anything to report with regard to the Pan Arctic development?

Mr. Lang: The Pan Arctic development?

Mr. Gilbert: Yes.

Mr. Lang: You are talking about the oil development, are you?

Mr. Gilbert: Yes.

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Mr. Lang: I do not have any direct report to make about this. The estimates of the Department of Indian Affairs and Northern Development would involve the proper reference to this as this falls within their purview rather than within this Department.

Mr. Gilbert: Do you have anything to report in regard to the consultations between Mr. Nixon and Mr. Trudeau concerning their discussion in Washington on the national oil policy?

Mr. Lang: No, I do not have, Mr. Chairman, although I would be glad to attempt to answer specific questions if you have them.

Mr. Gilbert: Mr. Minister, I wonder if could refer to page 13 where you discuss the water pollution problem and indicate that:

The federal government has particular responsibility for pollution abatement programs on international waters, certain interprovincial waters, and certain major intra-provincial waters which meet the oceans at large national harbours.

Later on you say these programs:

which the federal government participates as partners with provinces,

What progress has been made with regard to participating with the provinces either in a legislative program or in a practical way? You have mentioned that we are going to have a Canada waters act. Now, are you contemplating a Canada pollution act which

would integrate or co-ordinate with the provincial legislation, and so forth?

Mr. Lang: We already have legislation which allows for the exploring with the provinces of certain aspects of water management, and this reference really envisages further such exploration and co-operation. We will certainly want appropriate legislative authority of any kind which we do not have in regard to this. The discussions between the federal authorities, between this department and the provinces, go on frequently on a fairly wide scale with regard to all matters of water management, and I would expect this to continue and indeed to accelerate fairly rapidly.

Mr. Gilbert: Mr. Minister, there is a feeling amongst Canadians that there is a lack of leadership with regard to this pollution problem and many feel that the federal government should take a leadership role and have the co-operation and the co-ordination of the provinces. What is your feeling in this regard? I get the feeling that you are more passive than active, and it becomes disturbing to many Canadians.

Mr. Lang: I think your feeling is not uncommon in you but may not necessarily bear any relationship to the facts.

Mr. Gilbert: Would you explain that, Mr. Minister?

Mr. Lang: I do think there is real room for national leadership in regard to water pollution and the government has been very concerned to exercise this leadership while at the same time, of course, being fully mindful of the special concerns of the provinces in this area. This is an area where surely more dramatic action might be possible if we were in fact, a unitary state rather than a federal state.

We are, for extremely good reasons however, a federal state, and therefore the leadership we give and the initiatives which we take in this matter have to be taken in the more painful way, and sometimes therefore the slower way, that results from this federal structure. I do not think it really reflects on the leadership or the initiative that we accept the pattern of our national existence.

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Mr. Gilbert: I think that is all for the moment, Mr. Chairman.

The Chairman: Mr. Paproski?

Mr. Paproski: Mr. Minister, I have one question. I would like a little more explanation of the subvention program on Western coal. What is meant by the subvention assistance program that you have for western coal?

The Chairman: Mr. MacNabb?

Mr. G. M. MacNabb (Assistant Deputy Minister Energy Development): Mr. Chairman, there have been three Western companies that have been supported by the federal government subvention program which is administered by the Dominion Coal Board. At present these companies are Canmore Mines Limited, Coleman Collieries Limited and Kaiser Resources Limited. This program has been going on for a number of years. I am speaking now specifically of the program to support the export of Canadian coal.

The objective was to assist these companies over the period of limited markets, trying to convince overseas purchasers of the quality of Canadian coal, and to assist them until large term export contracts could be negotiated and operation under those contracts commenced.

At that time it was always recognized that economies in scale could be realized both in the production of the coal and in the movement of the coal from the mine to the dock. These economies will be realized. For example, unit train operations should commence from the Kaiser collieries this coming fall. Therefore, the subvention assistance to Kaiser Company will terminate March 31 of next year and to the other two companies on March 31 of the following year.

Mr. Chappell: May I ask a supplementary question?

The Chairman: Not on the first round, Mr. Chappell; I am sorry. I would have to allow it to others if I did. Mr. Hymmen?

Mr. Hymmen: I have a couple of general questions I would like to ask the Minister. Before I do I would say I think that all the members of the Committee have been reminded by the Minister's statement of the over-all importance of the new department which was reorganized in 1966.

I have several general questions.

I wonder if the Committee could be given later a list showing the composition of the six national advisory committees referred to on page 5?

Mr. Lang: I would be glad to.

Mr. Hymmen: Second, I would like to go back to the question that Mr. Gilbert raised concerning water pollution. Some of us feel that so far as the Constitution is concerned water pollution is a rather grey area. Concerning the interpretation at the federal responsibility as explained in the Minister's statement, is this by agreement, by interpretation or how was this present interpretation of policy arrived at?

Mr. Lang: Mr. Chairman, I would like to make it perfectly clear that the references to the federal participation in various activities in regard to pollution in my statement are no way designed to be a complete statement of the federal jurisdiction in this area. The question of federal jurisdiction is, in fact, a complex one. The areas I referred to are simply examples from within the jurisdiction but there are many avenues of federal authority that involve it in water pollution.

We have many statutes which affect water pollution and indeed many which are not directly under the Department of Energy, Mines and Resources, viewed from that point of view. There are fisheries laws and laws concerning navigable waters, and so on, all of which really affect this matter. This is by no means a complex area and I welcome your question because it does give me this opportunity to make clear that this was not in any way a definitive statement of jurisdiction but simply a few examples.

• 1220

Mr. Hymmen: I have another question. I refer to one word in the brief on page 4. Under "a sound policy for management of resources..." sub-paragraph (e) we

...must utilize air and water in a variety of ways.

I would like to ask to what extent, if any, is the Department involved in consultation with other departments—for example, the Department of National Health and Welfare which, I understand, has been given some responsibility in regard to air pollution. I ask this question because I feel that in some respects air is one of our important national resources, if not the most important international resource and, while I have already mentioned diversification in the importance of the over-all Department of Energy, Mines and Resources, I am not suggesting that this diversification be magnified. However, the

Province of Ontario has already decided that the question of preservation of water and air should be brought under one roof. Now, my question, to go back to it is: is the Department of Energy, Mines and Resources involved in any way in any consideration at the federal level in regard to air?

Mr. Lang: The Department is involved even with some of the matters that are of particular concern to the Department of Health through interdepartmental committees which watch over the various aspects of the interest. Of course, the Department is really involved quite directly because of the real relationship between a number of things including air and water pollution—some water pollution is, at one point in its history, air pollution, and so on, so there is an inevitable combination here. These problems tend to be sorted out through interdepartmental committees.

Mr. Hymmen: Now I will ask the leading question and the Minister does not have to answer it if he does not wish to. Can anything be gained by bringing the preservation or the control of these two important resources under one roof?

Mr. Lang: That, of course, again is a policy question and I will accept your invitation not to answer it, except to point out that while bringing them under one roof would result in a nice cohesion in regard to the question of total environmental pollution, it would leave a need for some interdepartmental committees of another sort in regard to different aspects of the operation.

Questions of health would still be very much involved with this operation, and questions of industrial development would be involved, so there is really no way you are going to organize this effort so as not require a very high degree of co-ordination among several different departments.

Mr. Hymmen: Thank you. With deference to the other members of the Committee, I have one more question. This has to do with a suggestion of a tanker being constructed, I think it is the *S. S. Manhattan*, to transport oil through the Northwest Passage. Has the Department any views on this particular suggestion?

Mr. Lang: We have some active involvement. Perhaps Dr. Isbister would like to comment on this point.

Dr. C. M. Isbister: Mr. Chairman and Mr. Minister, a number of different government

departments have been interested in this, the Department of Transport even more than ourselves, but our Department has been interested in the Task Force on Northern Oil Development to which reference was made and is studying and following this matter very closely. This voyage, as you know, is being made on an experimental basis this summer.

As government officials in our Department, we have certainly taken the view that Canada has a great interest in seeing this experimental voyage made, and we have set ourselves to doing everything that we can to ensure its success. The Department has a direct contribution to make in connection with this because the success of the voyage will rely, for example, on the hydrographic knowledge of our Department. In addition to this, some of the government's and some of the country's leading experts on northern ice conditions are senior scientists in our Department. They have already been consulted at an early stage by people planning the Manhattan Project.

● 1225

In brief, the answer to your question is that we are very interested. We have a contribution of our own to make as a Department and we are trying to make sure that the federal government's knowledge of this and contribution towards it is well co-ordinated and purposeful.

The Chairman: I have the following on my list at the present time in this order: Mr. Deakon, Mr. Harding, and Mr. Whiting. Mr. Deakon?

Mr. Deakon: Thank you, Mr. Chairman. I noticed that in his introductory remarks Mr. Lang referred to the intention of the government to introduce this Canada Water Bill. I would like to ask Mr. Lang, if I may, whether there has been any consultation with, and if so whether he had received co-operation from, the provinces and other bodies with reference to the formulation of this bill?

Mr. Lang: The best answer I can give to that, Mr. Chairman, is that the general discussions and co-operation between us and the provinces has been a part of the input into the drafting of the bill. The drafting is still going forward. It is one of our objectives in producing the bill for first reading in this session without proceeding with second reading of it that there will be further time when the actual bill itself can be discussed with the provinces.

There is no doubt, as you can see from the rest of my statement in regard to water, of our awareness of the need for co-operation with the provinces for the most effective kinds of programs, quite apart from the jurisdictional question. This is what we hope to accomplish, more specifically after the draft, which does bear in mind the past history of co-operation, is available.

Mr. Deakon: Mr. Chairman, I would like to ask Mr. Lang also whether this bill that is being proposed will contain clauses pertaining to the enforcement of offenders who cause pollution of our waters?

Mr. Lang: I am afraid, Mr. Chairman, that as I get towards specific questions about what the bill will contain I am on difficult ground. We are drafting the bill and, of course, at this stage it is really prior to governmental decision on the actual content, I cannot really go into detail.

Mr. Deakon: I am not asking you to go into detail. My question is whether any section of that bill will include enforcement policies. That is all I want to know.

Mr. Lang: I count that as detail.

Mr. Deakon: All right; in that case I will ask another question if I may, Mr. Chairman. Is the government at present, through the Department of Mines, Energy and Resources, conducting any experimentation or research with reference to water pollution? I am specifically thinking about the aeration process.

Mr. Lang: Dr. Prince, perhaps you would like to answer that.

Dr. A. T. Prince (Director, Inland Waters Branch, Department of Energy, Mines and Resources): Yes, Mr. Chairman. I would have to say at the moment the answer is, no. We are certainly at least studying on paper a number of these things and conferring with various people that may be involved in this sort of development. I think I should comment that our facilities for conducting research in a physical sense are extremely limited at the present time.

We are occupying rather small rental quarters in Ottawa for the headquarters of our Water Quality Division, and facilities will not be really adequate until we move into the Canada Centre for Inland Waters at Burlington, which will be a year or two from now, at least.

Mr. Deakon: Is there any allocation of funds at present for research purposes to be given to universities or groups such as that to do research work of this kind?

Dr. Prince: Yes, Mr. Chairman, there is an allocation of funds through the National Advisory Committee on Water Resources Research and funding in this general area of abatement processes has been awarded for the past two years.

• 1230

Mr. Deakon: I should like to ask a last question, if I may, Mr. Chairman, off the pollution issue, and this is regarding the mineral resources of our northland and mineral resources which are under the jurisdiction of the federal government. Is the government contemplating requirements that these raw materials be refracted and processed in our country instead of being shipped overseas in a raw state?

Mr. Lang: The government, of course, is particularly interested in encouraging this sort of thing. Any change in governmental policy would, of course have to be announced in due course.

Mr. Deakon: I get much success. Thank you, Mr. Chairman.

The Chairman: Mr. Harding?

As I said, I have Mr. Harding and Mr. Whiting. After we have finished with them I think we should call the meeting to a close.

Mr. Harding: I have several questions on different aspects of the Department, but I will start with water resources because I am extremely interested in this aspect of development.

If Parliament can pass a Canada Water Act why cannot it pass a Canada anti-pollution act?

Mr. Lang: Are you talking about anti-pollution of every kind?

Mr. Harding: Yes; I am thinking in terms not only of water, but of air and soil, and so on.

Mr. Lang: I presume that question, Mr. Chairman, really calls for an interpretation of the jurisdiction of the country under the British North America Act. It would really depend, I think, on the nature of the actual sections whether the question would be answered totally in the affirmative or totally in

the negative. That I give you as an off-hand legal opinion which I ought not to give you at all.

Mr. Harding: Mr. Chairman, it seems to me that water is both provincial and federal and that the jurisdiction is mixed up. If we can have a Canada Water Act I see no reason for our not being able to deal with pollution on exactly the same basis.

Mr. Lang: I fully expect, Mr. Chairman, that the Canada Water Act, which we will be presenting, will be fully within the jurisdiction of the federal government. When the members look at it I think it will really speak for itself.

Then to ask whether every different kind of act would also be within the jurisdiction is a rather hypothetical and rather complex question which, of course, cannot be answered.

Mr. Harding: Mr. Chairman, I am going to make one or two comments on the brief. I read it with a great deal of interest and marked one or two points.

On page 2 you have set out some pretty broad principles, of which I approve, incidentally. You say:

The principal concern of the Department is not gain, but opportunity: opportunity for Parliament to enact wise and effective legislation on which to base federal activities towards the improvement of man's environment; opportunity for federal-provincial cooperation in water resources development and enhancement;

Then we go over to page 3, and we start with No. 1:

1. The development, through data-gathering and research, policy formulation and planning, and the coordination of national effort, of a sound basis for the exploitation of...

And I am going to come down to (b):

(b) water and renewable resources

I have raised this matter before, and I am going to go right back to the Navigable Waters Protection Act. Navigable waters come under the jurisdiction of the federal government, and if we are going to get sensible planning in water development someone has to be responsible for the plans dealing with every aspect of navigable waters.

I am going to give the Committee an example. I think we should look into it and do

something about it. Crown corporations are

• 1235

not covered, I understand, by the provisions of the Navigable Waters Protection Act and a provincial government, or a provincial Crown corporation, can build a dam on any navigable stream they wish and do a tremendous amount of damage to the ecology of a huge area. And they do not have to report to anyone. To me, Mr. Chairman, this is not sound, proper, sensible, or logical, planning.

If we are going to have the type of planning you have mentioned in your report then, as a Committee and as a House of Commons, we just have to sit down and make some changes in the present legislation.

My question for the Minister is whether he has anything in view relative to changes to the Navigable Waters Protection Act so as to bring provincial and federal Crown corporations under its provisions?

Mr. Lang: Mr. Chairman, the Navigable Waters Protection Act was recently before the House of Commons and I think this matter was discussed very fully by the appropriate committee with the appropriate Minister piloting the legislation through the House.

I hope that the very interesting representations which the hon. member has made will be made, particularly later on in the life of this Parliament, when the water act is presumably before this same Committee and when the government will be presenting what in its view is the appropriate approach to handling the over-all question of water and renewable resources before the Committee. At that stage I will be very glad to hear the specific representations of members about any defects in our approach.

Mr. Harding: Mr. Chairman, I would like to follow this up. Has the Department made any advance to the provinces in the discussion of this specific problem? Mind you, I can understand it could ruffle some feathers, to put it mildly, but it has to be done. Someone has to be responsible.

We had an example in the Peace River when the dam was built. No application was made to the federal authorities. One of the provinces had objected to this Peace River dam and I am not objecting to the building of the dam. Now we find that a tremendous amount of ecological damage has been done in the Mackenzie River Delta, and we are only now starting to measure it. It seems to

me that someone must be responsible for having proper surveys made before we proceed with these projects.

If something is in dispute—and as I look at it today I think this is one of the key points outlined in your presentation—someone has to have the responsibility for making a decision. I suggest that surveys will have to be made by the federal Department, and before we okay a project we will have to make sure that we are not doing more damage than the good which will result from perhaps a single purpose use of a dam which may just be for the generation of power.

All these costs, Mr. Chairman, should be taken into consideration. We might find in the long run that it is cheaper to put in an atomic energy plant rather than have a vast amount of destruction over a huge area.

I am going to suggest to the Committee that we must follow this up, and to the Minister that, if they are not already in the Canada Water Act, some pretty serious consideration be given to including the checks and counter-balances needed to ensure a logical and sensible—in any opinion, a logical and sensible—development of our water resources.

Mr. Chairman, to get back to pollution again, you can put every pollution control in the various acts we are talking about, but if we leave this huge gap in the Navigable Waters Protection Act we are going to have pollution of water basins for generations to come. Vegetation is just flooded over and spawning grounds are destroyed. There is a

• 1240

tremendous amount of ecological damage. I think we just have to be prepared to make our estimates and I believe very coldly and logically make our decisions based upon them. There is no doubt that there will be protests from the provinces, but I think they too, in the long run, will realize that orderly and sensible development has to take place.

There is another question, Mr. Chairman, that I would like to ask the Minister. We have had an increasing number of reports, particularly from American sources, about the export of water. I have asked a question about it in the House. I understood that some studies were being made. I would like to ask the Minister what studies are going on within the Department, who is making them, when we can expect the report to come down, is there any preliminary report we can get hold of to see what has been done, and so on?

Mr. Lang: Mr. Chairman, I agree with the comments first expressed about the requirement in this area for a responsible, comprehensive review of the impact upon our total environment of any given project and, of course, this has been very much in the mind of the government. The pilot projects which have been made available to the various regions of the country to study water resources are really designed in this way. They are meant to provide a comprehensive review of the use of the water resource.

There are within the Department many studies going on with regard to the use of water. The Department has no specific plan in regard to finding out ways of exporting water.

Mr. Harding: I am not suggesting that you export water. I am only trying to find out if surveys are being made to estimate the quantities of water and the requirements of water for Canadian use, and if possible that there might even be a surplus.

Mr. Lang: Dr. Prince, would you like to comment on that.

Dr. Prince: The question of surveys regarding the quantity of water, I think, relates primarily to the question of stream-flow measurements, hydrometric measurements. And the country has for many years had a survey program of this kind going on, indeed since the turn of the century when it started. At the present time we have something like 2,200 hydrometric stations of various types throughout the country. These are concentrated primarily in the southern portions of the country and are related to water management and use activities primarily but the network is being expanded and in fact is being studied with regard to expansion right now to penetrate into the more remote regions of the country to assess the total inventory of water.

The cost of such operations is very large, and insofar as we can, we are endeavouring to respond to this to get a total assessment of our water inventory in the matter of stream flow. The time-factor on this as to when we will know what we require in the country, how much we have in detail is a very long-term matter, and I would not expect answers on this for several years to come.

Mr. Harding: Mr. Chairman, these studies are in the process of being made. Are they about Canadian requirements and so on? Is

there a specific department or some specific individual who is in charge of this survey?

Dr. Prince: Mr. Chairman, the matter of the survey of stream flow is under the Water

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Survey of Canada, which is a division of the Inland Waters Branch of which I am Director. And we have a program, a continuing program not just a study program of what is to be done, but we have a staff of some 300 people engaged throughout the country in this activity, and they have been engaged in this activity for many years. It is a question of the size and scope of coverage that is before us at the moment.

Mr. Harding: Does this include, Mr. Chairman, the Canadian requirement projected many years ahead?

Dr. Prince: Mr. Chairman, in response to this question, I might say that we are undertaking in connection with consultants and in co-operation with the provinces, a study of the system and network design at the present time in two of the provinces, and we hope to extend these studies to evaluate the very question that is being asked. The question of how and what type of network development should be installed is a matter of considerable interest to us.

Rather than proceed with the expansion of the network in its present form, we are stopping to have a look at the whole system. It is extremely costly. I mentioned that we had some 2,200 stations at the present time. We may have to have 5,000 to 10,000 before we are through. And as stations are developed in the more remote areas, the cost of them, not only for installation but for maintenance, increases very markedly. The present average value is probably in the order of \$8,000 per station, and we want to know where we are going in detail before we extend our present program.

Mr. Harding: A further question, Mr. Chairman. Have there been any requests from the Americans for the export of water from Canada?

Dr. Isbister: There was a very clear statement made by the former Secretary of the Interior when he visited here a couple of years ago, in which he said in public that in the view of the United States Government, the priority task in the United States is efficient water management in the United

States, and the U.S. Government is not looking to Canada or to another country for its supplies of water.

The Chairman: Mr. Whiting.

Mr. Whiting: Is there any check being made on commercial boats on the Great Lakes with regard to pollution? I have heard it mentioned that some oil tankers occasionally dump excess oil from their boats into the Great Lakes. I was wondering if your department has any policing powers to correct this situation, if it does exist, and how do you go about it?

Dr. Prince: Regarding policing powers, I would say the answer to that is no. The question of involvement in the event of a major spill, yes I think we do have some involvement. I might say in this connection that at the present time the interdepartmental committee on water has asked for a study group to be formed. It is already formed, and it is looking into the matter of emergency spills and the co-ordination of all forms of action that may be taken in this connection. This working group was formed about two weeks ago and has been asked to investigate all plans, emergency plans or control plans, concerning the Great Lakes and other waters, both inland and coastal that are concerned with this sort of event.

Mr. Lang: I was going to ask if other departments have a particular interest in this kind of thing and if they would be involved. The Department of Fisheries, for instance, the Department of Transport in regard to navigable waters, and so on. So that there would be other involvement of the government through other departmental responsibilities.

• 1250

Mr. Whiting: If it was necessary that a boat make a spill out in the Great Lakes, who would they contact, or what would be the procedures that they would have to follow?

Dr. Prince: There are at the present time at least some emergency measures that involve agencies in both the United States and Canada. In the Great Lakes the situation depends on where it might happen as far as Canada is concerned. In the upper Great Lakes, contact with the RCMP, who in turn would contact appropriate agencies of the Department of Transport is a known procedure. In certain parts of the Great Lakes there are expediency

measures which would arrange for contacting the Ontario Water Resources Commission itself. We have our center at Burlington, and it is widely known and we are contacted.

What we are trying to do through this interdepartmental committee—and the Minister has mentioned that many departments are involved in this—we are endeavouring to work out a procedure which will be more effective and known throughout the whole community, as to what action should be taken in the event of an emergency such as you describe.

Mr. Whiting: Are there any penalties at the present time that could be enforced on these boat owners if they did this without consulting the appropriate department?

Dr. Prince: Mr. Chairman, at the present time there are penalties that can be imposed under the legislation of the Department of Transport. These penalties can be quite severe and are enforced under many circumstances. One of the difficulties is to find the culprit.

Mr. Whiting: I have a question on the pollution control centre in Burlington. How many scientific employees do you have there?

Dr. Prince: At the Canada Centre for Inland Waters, Mr. Chairman, at the present time the Department of Energy, Mines and Resources has the Great Lakes division, which is a unit of about 100 people. It is supported by another group from the Department, namely the Marine Sciences Branch, who operate the ships with a small detachment of water quality people. I would say that at the moment there are between 150 and 200 people on strength at the site, of whom perhaps one out of four may be a professional scientist or engineer. I could provide precise figures, if you wish.

Mr. Whiting: If you would I would appreciate that. How many of your ships are stationed in Burlington?

Dr. Prince: Is the reference to large vessels rather than small launches?

Mr. Whiting: Both.

Dr. Prince: In respect of large ships in the 500-ton class and up, there are two, one is our own vessel *Limnos*.

Mr. Whiting: I am referring to your own.

Dr. Prince: *Limnos* is our own vessel; it is owned and operated by the Department. With regard to smaller craft I think it would be in the order of perhaps 10. These are launches and various utility boats from perhaps 10 tons down to whalers with large outboard motors.

Mr. Whiting: Is that 500-ton ship Canadian-made?

Dr. Prince: Yes, *Limnos* was constructed at Port Weller, Ontario by Canadian Drydocks Limited.

Mr. Whiting: And the others?

• 1255

Dr. Prince: I am not sure of the answer on the smaller craft but I think most of them are Canadian built.

Mr. Whiting: Could you get me that information?

Dr. Prince: Yes, this information could be obtained.

Mr. Whiting: Those are all the questions I have, Mr. Chairman.

The Chairman: Is the Committee prepared to stand Item 1 and go on to Item 2 at our meeting at 8 p.m. on Thursday in Room 371?

Yes, Mr. Deakon?

Mr. Deakon: I was wondering, Mr. Chairman, whether you could take under advisement discussing with the steering committee the possibility of the Committee visiting this Burlington Centre.

The Chairman: Yes, we will definitely be discussing this. This has already been discussed by your steering committee. There are cards available if you want to request that certain pamphlets be sent to you.

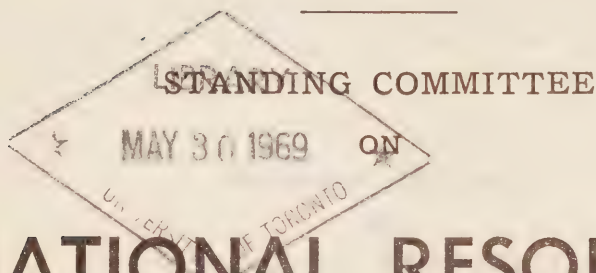
I want to thank the officials and Mr. Lang for being with us this morning and this afternoon.

The meeting is adjourned.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69



NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE
No. 19

THURSDAY, APRIL 17, 1969

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources.

WITNESSES:

(See Minutes of Proceedings)

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THE QUEEN'S PRINTER, OTTAWA, 1969

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

Aiken,
Beaudoin,
Chappell,
Code,
Comeau,
Deakon,

Gilbert,
Harding,
Langlois,
¹ Mr. Mahoney,
Moores (*Bonavista-Trinity-Conception*),

Orange,
Paproski,
Ritchie,
Roy (*Timmins*),
² Serré,
³ Smerchanski,
Whiting—20.

(Quorum 11)

R. V. Virr,
Clerk of the Committee.

Pursuant to S.O. 65 (4) (b)

¹Replaced Mr. Murphy on April 16, 1969

²Replaced Mr. Legault on April 16, 1969

³Replaced Mr. Marchand (*Kamloops-Cariboo*) on April 16, 1969.

ORDER OF REFERENCE

MONDAY, April 14, 1969.

Ordered,—That the Standing Committee on National Resources and Public Works be granted leave to adjourn from place to place within Canada, accompanied by the necessary staff.

ATTEST:

The Clerk of the House of Commons

MINUTES OF PROCEEDINGS

THURSDAY, April 17, 1969.
(19)

The Standing Committee on National Resources and Public Works met this day at 8:27 p.m. The Chairman, Mr. Hopkins presiding.

Members present: Messrs. Code, Comeau, Deakon, Gilbert, Harding, Hopkins, Hymmen, Langlois, Mahoney, Paproski, Ritchie, Serré, Smerchanski, Whiting—(14).

Witnesses: From the Department of Energy, Mines and Resources: Dr. J. M. Harrison, Assistant Deputy Minister (*Mines and Geosciences*); Mr. J.-P. Drolet, Assistant Deputy Minister (*Mineral Development*); Mr. G. M. MacNabb, Assistant Deputy Minister (*Energy Development*); Mr. D. G. Crosby, Chief (*Resource Administration Division*).

The Chairman read the report of the subcommittee as follows:

THURSDAY, April 17, 1969.

The Subcommittee on Agenda and Procedure met this day at 3:30 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Comeau, Deakon, Harding, Hopkins and Hymmen.

The Committee discussed the programme for the completion of the estimates of Energy, Mines and Resources.

The following was recommended:

April 17, Votes 5, 15, 20 and 25 pertaining to Mines, Minerals and Geosciences and Votes 40, 45, 50 pertaining to Water and Renewable Resources.

April 22, Visit to Fuel Research Laboratory.

April 24, Evening meeting—possible National Energy Board if votes pertaining to Water passed.

April 29, Visit Heavy water plant—Sydney, N.S. Return same day.

May 1, Visit Chalk River.

May 6, 8, Meeting to complete AECL votes and loans.

May 12, Leave p.m. to visit Inland waters, Burlington. Return evening May 13.

May 15, Complete Vote 1 EMR.

On Motion of Mr. Whiting,

It was agreed that the report be concurred in.

The Committee resumed consideration of the estimates of the Department of Energy, Mines and Resources.

Vote 5, Construction or Acquisition of Buildings, Works, Land and Equipment \$631,000. was carried.

The Chairman called votes 15, 20 and 25 relating to Mines, Minerals, Energy and Geosciences.

And the questioning continuing, the Committee adjourned at 10:20 p.m. to the call of the Chair.

R. V. Virr,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Thursday, April 17, 1969.

introduce your officials again before we start, please.

• 2027

The Chairman: Gentlemen, I see a quorum. I call the meeting to order and I will start off by reading your subcommittee report.

(See Minutes of Proceedings.)

The Chairman: That is the report of your steering committee, gentlemen. Could I have a motion for the adoption of this report?

Mr. Whiting: I so move.

Motion agreed to.

The Chairman: I will now call Item 5 of Energy, Mines and Resources and you will find this listed in general terms on page 54 of the Blue Book and in more detail on page 58 of the Blue Book.

5 Construction or Acquisition of Buildings, Works, Land and Equipment including Common-use Field Survey Equipment—\$707,000.

I would like members of the Committee to stay with the subjects listed under Item 5 so that we can pass it after discussion when that item is finished, and the same with each other item as we come to it, rather than wandering over too wide a field at one time.

Dr. J. M. Harrison (Assistant Deputy Minister, (Mines and Geosciences), Department of Energy, Mines and Resources): You might also, gentlemen, refer to this book which I believe you were all given, the new form of the estimates put up as a trial which refers more specifically to the programs under this particular activity.

Mr. Gilbert: What page?

Dr. Harrison: Page 16 of the White Book or on page 58 of the Blue Book.

The Chairman: I would like to welcome Dr. Harrison and his officials this evening. For the benefit of any new members of the Committee and all of us I wonder if you would

Dr. Harrison: Thank you, Mr. Chairman. As the Chairman mentioned my name is Harrison, and I am the Assistant Deputy Minister for Mines and Geosciences; on my right is Mr. Jean-Paul Drolet, Assistant Deputy Minister for Mineral Development; next to him, Mr. MacNabb, Assistant Deputy Minister for Energy Development; along the wall, Dr. Crosby from the Resource Administration Division; A. R. Scott, Energy Development; Robert Code, Senior Personnel Adviser; Mr. Sutherland from the Deputy's Office;

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Mr. MacLeod, Information and Mr. Geldart also from Information.

The Chairman: Thanks, Dr. Harrison. I am now prepared to receive indications of those who want to question Item 5. Mr. Harding?

Mr. Harding: Mr. Chairman, there are several points I would like to raise with the Department. I have gone through the talk again which the Acting Minister gave us the other day and I notice it is in very, very general terms. There are several aspects of mineral development which I would like to explore at this time and perhaps we could get some information from the staff members here.

My first question is this...

The Chairman: Mr. Harding, if it is on minerals possibly we could wait until Vote 15.

Mr. Harding: Vote 15?

Mr. Hymmen: Mr. Chairman, I do not know whether it is in order to make a suggestion, but when the subcommittee met this afternoon we were looking at the new format of estimates which is very confusing when you go to the Blue Book. I wonder if the Committee would agree to take the first four items as a group and then leave the items on Water, starting with Item 40, so that there

would be a little more leeway to the members of the Committee to consider these various things.

Mr. Deakon: I think it is a good suggestion, Mr. Chairman.

The Chairman: Do members of the Committee agree with that?

Some hon. Members: Agreed.

The Chairman: All right, then, we will consider Items 5, 15, 20 and 25. I think perhaps we could pass Item 5 first and get it out of the way because I think 15, 20 and 25 are a better grouping, would you not say? Is there anyone who has any questions on Item 5 dealing with Construction or Acquisition of Buildings, Works, Land and Equipment Including Common-Use Field Survey Equipment (Details, page 58). Any questions on that Item?

• 2035

Mr. Comeau: Mr. Chairman, where did you read that?

The Chairman: I am going by the Blue Book.

An hon. Member: It is not a separate item in the white estimates book.

Dr. Harrison: It is a separate item in the white estimates under the second major grouping on pages 16 and 17 of the White Book.

The Chairman: I feel that in dealing with these we have to deal with the votes in the order in which they appear in the Blue Book because these are the ones that are listed in our terms of reference from the House. If there are no questions regarding Item 5, shall Item 5 carry?

Mr. Gilbert: Mr. Chairman, just before we carry Item 5...

An hon. Member: Where is Item 5, Mr. Chairman?

The Chairman: Pages 54 and 58 in the Blue Book.

Mr. Smerchanski: What is the difference between the Blue Book and page 16 and 17 of the White Book?

Dr. Harrison: It will be the first three items under the proposed estimates for 1969-70.

Mr. Smerchanski: That is Mineral Development, Energy Development, Field and Air Surveys?

Dr. Harrison: Yes.

Mr. Smerchanski: Thank you.

Mr. Hymmen: Mr. Chairman, before we should proceed I would like to explain there was some confusion on the notices which caused our trouble at the start of this meeting. I understand the Minister was at Room 307 and has gone back over to the House.

The Chairman: What does it say on the notice, 307?

Mr. Hymmen: Mine says 371, but I think Mr. Whiting said 307.

Mr. Whiting: That is right, Mr. Chairman.

Mr. Hymmen: I think we should carry on but I just wanted to give a word of explanation, Mr. Chairman.

The Chairman: Thanks, Mr. Hymmen.

Mr. Gilbert: Mr. Chairman, I must apologize. Does the Emergency Gold Mining Assistance Act come within this Vote 5?

Mr. G. M. MacNabb (Assistant Deputy Minister (Energy Development) Department of Energy, Mines and Resources): No, sir.

Mr. Gilbert: It does not? All right then. I will get to that at a later time.

Item 5 agreed to.

The Chairman: I will now entertain questions for Votes 15, 20 and 25.

Department of Energy, Mines and Resources

*Mines, Minerals, Energy and
Geosciences*

15 Administration, Operation and Maintenance including the administration of the Explosives Act, the purchase of air photography, the expenses of the Interdepartmental Committee on Air Surveys, the National Advisory Committee on Control Surveys and Mapping, the Canadian Permanent Committee on Geographical Names, the National Advisory Committee on Research in Geological Sciences, the National Advisory Committee on Research in Mining and Mineral Processing, the National

Committee for Canada of the International Astronomical Union, the National Advisory Committee on Astronomy, and authority to make recoverable advances not exceeding the amount of the share of the United States Government of the cost of binding annual reports and maintaining boundary range lights—\$39,152,600

20 Construction or Acquisition of Buildings, Works Land and Equipment—\$4,346,000

25 Grants as detailed in the Estimates and contributions in accordance with the terms and conditions specified in the sub-vote titles listed in the details of the Estimates—\$909,400

Mr. Harding: Thank you, Mr. Chairman. I was under the impression you were going to cover the Mines Department first and then lead off into the water resources later on.

My first question to the Assistant Deputy Minister is: has your Department any economists, and how many, dealing with mineral resources?

Mr. J.-P. Drolet (Assistant Deputy Minister (Mineral Development) Department of Energy, Mines and Resources): In what we call the mineral development sector or group there is a branch called the Mineral Resources Branch and all of the professionals working within this group are mining engineers or geologists who have specialized in the field of mineral economics, some by practice, some by academic training, being graduated from universities, mostly in the United States.

There are only a couple of places where you can take post-graduate studies in mineral economics, namely, Columbia University and Penn State. There is now a school being opened, or rather a new division being opened in an old school of mines, the Colorado School of Mines, which will give a degree in mineral economics. I have about 26 people in that Branch.

Mr. Harding: Thank you. I have another question, Mr. Chairman. Have any of these

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economists studied the Carter Report in detail, and more especially the depletion allowances and the tax holidays? I understand that a report of this nature was being made by the Department. Has it been made

and are these reports available for the members of the Committee?

Mr. Drolet: The Carter Report certainly is a report that has been studied in great detail by the persons of the Department of Energy, Mines and Resources, and more specifically by this group of mineral economists for the simple reason that there are about 23 recommendations in the Carter Report that if implemented, would have a direct effect on the mineral industry. For instance, as you already know, the Carter Commission recommended that all incentives to new mines, and even depletion allowances, the three-year exemption, and so on, be taken away. This would have great effect on mineral development in this country.

In view of that, we have studied all the briefs that have been presented by various groups, associations, or mining companies. We have received, I think, 45 different briefs that we have studied in detail. In these briefs, the cases of various companies, mineral groups, developers, and producers were presented. We have ourselves prepared confidential studies that we have submitted to the Minister of Finance or his officials. We have made analysis of the effect of the Carter Report, what would happen in our view if depletion allowance were not granted any more, or if the three-year exemption were taken away. All this. We have studied these alternatives. We have sat with officials of the Department of Finance who are responsible for making recommendations to the Minister of Finance about the Carter Commission Report, and we are not allowed to give these to the general public or to the members of this Committee.

Mr. Harding: I understand, Mr. Chairman, that these reports are not available to the members of this specific Committee.

Mr. Drolet: Not from us. They may be made available by the Minister of Finance, but we have given them to him.

Mr. Harding: I would suggest Mr. Chairman, that the Committee try to obtain reports of this nature. I think it would assist us immensely in the type of work which I think we should be doing.

There is a further question in connection with these studies. I think it could be of a very general nature, too. Have you an indication of the total amount involved in both the depletion allowances and the tax holidays?

Mr. Drolet: Yes.

Mr. Harding: And also the tax incentives?

Mr. Drolet: I have a note here that I prepared for myself, looking at what has been happening. For instance, in the case of the three-year exemption, since 1955 this three-year exemption is granted to new mines. This provision has become a permanent part of the Income Tax Act. I have made some rough calculations, and during this period from 1956 to 1967, inclusive, we received 240 applications from new mines requesting this three-year exemption, and 196 were granted exemptions.

This exemption is worth a lot of money to each mine, and rarely has it been less than \$500,000 for a new mine. In many cases, it has represented several millions of dollars. In total, in the calculations I have made, this exemption has been estimated to have a value of about \$50 million per year for the Canadian mineral industry. As an average figure, I may say that about 15 applications are received every year.

Mr. Harding: Thank you. That is just the depletion allowance.

Mr. Drolet: No. This is the three-year exemption. With regard to the depletion allowance, I have not made the same calculation, but it could be done, I suppose. I may have some round figures for you, if you wish.

Mr. Harding: If you do not have the figures, would your Department be able to dig this information up for the Committee?

Mr. Drolet: Yes. This could be obtained in co-operation with the Department of National Revenue, because it is a matter of taxation.

Mr. Harding: Yes.

Mr. Drolet: You understand that our Department is an adviser to the Department of National Revenue on these incentives that are granted to new mines, and old mines also. There are many other incentives, and it would be a big job to make a calculation to

Mr. Drolet: No.

Mr. Harding: Would you be able to obtain this, also? I would suggest that...

Mr. Drolet: I may try...

Mr. Smerchanski: Mr. Chairman, as a supplementary question to this. I appreciate what the member is trying to...

The Chairman: Mr. Smerchanski, if it is a supplementary to Mr. Harding's question, we are on the first round, and as a rule...

Mr. Smerchanski: The only thing, Mr. Chairman, is that I am certain that if we are talking about tax incentives, and if we are asking our witness to give us the summary on tax incentives, we must take into account the fact that the witness has stated that there is some \$50 million of capital expenditures that have gone in before tax incentives become operative. Therefore, it would be natural to compare the amount of tax dollars paid in for labour, supplies and so forth before the tax incentive comes into play. Otherwise we are asking the witness to go into an almost nebulous point of research which, when the figures are given to us, are meaningless. We have to have some comparable or basic...

The Chairman: Mr. Smerchanski, I am sorry. I am going to have to call you to order here. I appreciate your comments, but on the first round of questioning we do not permit supplementaries. That is what I was getting at.

Mr. Deakon: Mr. Chairman, how long does each questioner have to ask questions?

The Chairman: Ten minutes.

Mr. Paproski: On a point of order, Mr. Chairman. The official Opposition is the Conservative Party, and I think it is only fair that you should have asked us first before the other party.

We are entitled to this privilege, and I think that this is the only thing that we really want.

The Chairman: On this point, the steering Committee did not recommend this. We met before we started our hearings and laid down the guidelines. We did discuss this point. On opening Item 1 of the estimates of any department or of a Crown corporation, if it was the desire of the members representing the various parties on the Committee to have

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see how much money it represents. There are also pre-production expenditures and capital cost allowances.

Mr. Harding: Mr. Chairman, a further question on this. You have the total for the tax incentives, if any, from the Department?

some comments, we were going to allow this. I believe that is what was decided.

If I am wrong on that I would like the members of the steering Committee who are present to correct me, but that is my recollection. When we come to the other items, I recognize members of the Committee as they indicate their intention to ask questions. Mr. Harding, you have one minute left.

Mr. Harding: Thank you, Mr. Chairman. This is the procedure we follow. There is another question. Has your Department done a detailed study on the amount of processing and of fabrication of all mineral resources which takes place in Canada?

Mr. Drolet: I would not say that we have made a study of all the minerals produced in Canada to see how far they are being processed. There are 60 different mineral commodities and once in a while we make a study of this specific problem. Again I would

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like to refer to some notes that I have here.

Mr. Harding: I have just one further question, Mr. Chairman. Are these studies available to the Committee members?

Mr. Drolet: Let us take further processing in Canada, since you are asking me specifically about that. This question of forcing a company that mines copper to further process its production in this country is not a matter that comes under the responsibility of the Department of Energy, Mines and Resources.

Mr. Harding: Mr. Chairman, I think the Assistant Deputy Minister misunderstands my question. I just asked, has the Department done a detailed survey on the amount of processing or fabrication of all mineral resources which presently takes place in Canada. I am not asking yet whether minerals could be processed further. I am just interested in the material from the Department on this processing aspect of it.

Mr. Drolet: Yes, in certain cases, for our own benefit, we have made a statistical analysis. For instance, I may tell you that 85 per cent of the copper mine production is processed within this country, the rest being exported in concentrates. We have made that study and we know it is 85 per cent.

In the case of nickel, for instance, most of our mine production goes through a semi-process stage: about 85 per cent of the nickel

production is treated in Canada. The remainder is exported in concentrates.

We have also looked at the fabrication: how much is fabricated in Canada. In some cases it is very little. We export concentrates or the metal.

In the case of some nonmetallics we have also made some analyses for our own benefit. Let us take the case of asbestos: we process, if you wish, asbestos in the first stage. We produce a fibre of asbestos but this fibre is exported around the world to about 85 countries, because to further process the fibre of asbestos would not be economical. We do not have a large enough market here to use all that fibre by mixing it with cement to make asbestos-cement products, which is the big thing in the world.

They would be too heavy to ship since cement constitutes about 85 per cent of an asbestos-cement product such as shingle or a pipe. Therefore, we ship about 100 different grades or types of asbestos fibre to the location where there is a big market such as Chicago and New York, or other world centres.

There are various stages in the further processing. It is the same thing with metals. As you know, there are various stages: first, to produce a concentrate; second, to send that through the smelter where you obtain an impure metal in the form of a bar. Then it goes to the refinery where the metal is purified and you have a pure metal as in the case of copper, which is 99.999 per cent pure. Then it is fabricated in this country or elsewhere. In most cases it is fabricated elsewhere because we do not have a large enough market to buy all the fabricated pieces in nickel or in copper or in lead or in zinc.

For instance, in the case of the lead, 60 per cent is further processed in this country. In the case of zinc about 45 per cent is processed in Canada.

Mr. Harding: Are these reports available for members of the Committee?

Mr. Drolet: These are various studies made internally and I will check on them and may present them to you.

Mr. Harding: If they are available?

Mr. Drolet: Thank you.

The Chairman: Mr. Paproski, you may start your questioning.

Mr. Paproski: One question I have, Mr.

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Chairman and witnesses, has to do with the fact that one may purchase air surveys, controlled surveys and mapping, of the Canadian continent much more cheaply from the United States government than in Canada. The mapping from the United States are more detailed than those in Canada, from the point of view of mineral assets, oil, the finds and everything else. I would like to know why this is possible?

Dr. Harrison: May I answer that, Mr. Chairman? Mr. Chairman, this is a rather enlarged concept that has got around concerning something which was purely a matter of convenience. The areas along the border between Canada and the United States do not necessarily, in fact rarely, coincide with the boundaries of national topographic map sheets which are part of the international network. Therefore, if Canada, for instance, is producing a map near the U.S. border, it will overlap into the United States.

A couple of years ago the latest edition of maps in the States, which was later than the latest edition of maps in Canada, overlapped into Canada and for certain parts of Ontario the maps available from the States were more up to date than the Canadian maps. This is purely a question of publication date. For many years before that the Canadian maps were more up to date than the U.S. maps.

On the question of cheapness, I think this must be somewhat exaggerated in the report to which you refer because we have made a practise within this Department of attempting to have more or less maximum charges for similar kinds of maps in the U.S. on the grounds that we simply cannot afford to charge that much more or that much less for similar maps in the United States.

Mr. Paproski: I do not mean to disagree with you, but it is my impression that many maps now of the Prudhoe Bay oil find and also of the Mackenzie Delta and also of the Arctic archipelago have been obtainable from the various departments in the United States and are much clearer than anything we have seen here in Canada. I am concerned about this, because do we know what is really going on up there, are we really aware of what is ours and what is not ours, have we had a really good experience of our aerial photogra-

phy in this area and are we aware that the United States does have better pictures of this area than we have?

Dr. Harrison: Mr. Chairman, I have never seen any systematic photographs of Canada except during the war and in the immediate post war years taken by U.S. aircraft over Canadian territory. So far as I know, the only photographs that are obtainable are those from the the National Air Photographic Library in Ottawa or from the various provincial governments who may have them on hand.

I have never seen an official United States map of Canadian territory. I have seen many maps illustrating various aspects...

Mr. Paproski: May I interject at this moment? I am speaking of the area in and around Alaska.

Dr. Harrison: In the Mackenzie Delta there may be some overlap to show the distribution of oil pools. We do exactly the same thing in Canada, and to show the specific mineral resource or geographic configuration or something of this nature which extends over the international boundaries. Canada produces maps of the same sort.

Mr. Paproski: Are American aircraft permitted to fly over the sovereign Canadian territory and take photographs?

Dr. Harrison: This is a question that I cannot answer; this would be purely a political question. So far as I know, it would not be

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done except for special purposes, I presume.

Mr. Paproski: Would you say, sir, that the special purposes would be because of the large find in the Prudhoe area, that there would be a little concern, whether it be Canadian or American, about what really exists in this area?

Dr. Harrison: I am sorry, sir, I do not understand your question.

Mr. Paproski: Would you say that photographs have been taken of areas in Alaska which overlap into the Canadian area in the last six months or so to give the American Department of the Interior an idea what is really going on in Alaska and the surrounding areas?

Dr. Harrison: I do not know the answer to that question. So far as I am aware, no

request has been made through our Department for permission to take such photography. It is quite possible that if systematic photography were being carried out in the area of continental Alaska that it would overlap the border to some extent, but...

Mr. Paproski: Yes. Have we taken a photographic survey of this area since the large oil find in the Mackenzie Delta area?

Dr. Harrison: Not a photographic survey, no. We already have the photographs on file.

Mr. Paproski: I see, but nothing within the last six-month period since the initiation of this large oil find which is predominantly in the Prudhoe Bay area?

Dr. Harrison: No, sir. There is no reason to do it. We already have the photography and there is nothing that we could learn from new photography that we cannot already obtain from the present photography.

Mr. Paproski: I see. That is fine, thank you.

Mr. Drolet: In your question, sir, you mentioned maps of mining properties.

Mr. Paproski: Since I am going to speak to you, I would like to know if you have done any magnetic surveys of this area?

Mr. Drolet: Yes, sir.

Mr. Paproski: When was the last magnetic survey made of this area?

Dr. Harrison: I am not sure but I think in about 1966 or 1967, somewhere in that time. I am not sure of this, sir. However, much of this country has been systematically covered many times and for various purposes by the various oil companies that have oil permits in the area.

Mr. Paproski: Could you tell us the results of these surveys?

Dr. Harrison: In the...

Mr. Paproski: The magnetic surveys.

Dr. Harrison: The magnetic surveys. All the magnetic surveys are published as fast as the information can be put together and released on maps. I cannot tell you offhand the specific maps that are available for this area, but I would be glad to look into the matter for you.

Mr. Paproski: Was your Department aware of what was going on in the Prudhoe area at

the time of the Panarctic Oils Limited development find?

Dr. Harrison: Do you mean were Canadians aware of the fact that the Americans were drilling in that area?

Mr. Paproski: No, was your Department aware?

Dr. Harrison: Not necessarily officially, but I am certain that Mr. MacNabb could answer that specific question.

Mr. G. M. MacNabb (Assistant Deputy Minister, Energy Development, Department of Energy, Mines and Resources): Mr. Chairman I cannot place the respective timing clearly in my mind but I am sure that it is general knowledge in the oil industry when drilling started at Prudhoe Bay. I believe the decision that was made on Panarctic was made prior to the commencement of real drilling operations in that area of Alaska. I can check that.

Mr. Paproski: Yes, fine. Are you aware, Mr. MacNabb, of the discoveries which we have? What do you think we have in the Canadian side of this find? As Prudhoe Bay is such an enormous discovery, would you say that we in the Canadian side have something equivalent to what the Americans have? Would you also say that it would be to our advantage to begin pipe line construction, or even look at the feasibility of a pipe line construction, for the Canadian side through the Mackenzie Delta along to Edmonton and down towards the Estevan or the Duluth area?

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Mr. MacNabb: Mr. Chairman, I believe Dr. Harrison is better equipped to answer this first question, but I think there is every hope that the structure is such that the potential that has now been discovered at Prudhoe Bay will extend over into the area of the Mackenzie Delta. Dr. Harrison may want to elaborate on that.

Dr. Harrison: As Mr. MacNabb has said, the question of large oil reserves in the Mackenzie Delta is a hope and a prospect. No oil has been found through drilling—at least not to the best of my present knowledge—in that northern region, and I think that perhaps this would be the answer to your second question as well, sir. I do not think anyone is going to build a pipe line on hope.

Mr. Paproski: Very well, Dr. Harrison. Has activity been accelerated by your Department because of the new discovery in Alaska?

Mr. MacNabb: Mr. Chairman, the second part of your question related to a pipe line and we would certainly not begin to construct a pipe line prior to the discovery of oil, but the task force on northern oil development which the Minister and the Deputy Minister mentioned the other day did study the possibility of a pipe line down the Mackenzie River valley.

Mr. Paproski: I appreciate that, sir, but this is where we start to become entrepreneurs as far as our Canadian oil industry is concerned, and unless we take the bull by the horns the next thing we know tankers will be going down the tidewaters of Alaska to San Francisco or into Seattle. Is anything being done as far as your Department is concerned in order to have the pipe line, rather than going through the tidewaters and being taken away from the economy of Canada, go through the Mackenzie Delta and down through the Northwest Territories and into the Chicago area? Do we have the initiative right now to do something about this before the people south of the border start beating us out of the action completely?

Mr. MacNabb: Mr. Chairman, a decision has already been made by the companies that made the large find at Prudhoe Bay to build a pipe line cross Alaska to tidewater in southern Alaska, but the possibility of a second pipe line still exists. One of the items the task force is concentrating on now is the economics of a pipe line and the difficulty in trying to build a pipe line in the northern areas with musket and permafrost. The third aspect that we are looking at is, of course, the transportation of northern oil through the Northwest Passage to the eastern coast of both Canada and the United States.

Mr. Paproski: But do these companies that are interested in building this pipe line through the Mackenzie Delta have any interest in Canada? I am speaking about the Northern Natural Gas Company. Do they have any interest in Canada? I have doubts in my mind. I think what is going to happen to us is exactly what happened to us in so far as the grain deal was concerned. Gentlemen, when we start letting the American people look after the sales of our products, as we have done with our grain, then we are going to have problems because they are going to

look after their interests before they look after us. I want to know if we are taking the initiative to try to control these finds that are going to be in our area of Canada in the Northwest Territories on the other side of Prudhoe Bay. Are we going to see that they come down through these areas to help Canada, to help the eastern markets, or are we just going to be lagging behind and wishing for the best? The way things are going right now, there seems to be an attitude of complacency on the part of the government. I do not want to be partisan, or anything like that, but I think this should be taken into consideration.

• 2110

Mr. MacNabb: Mr. Chairman, if we are successful in finding oil in the North, we have every control over how that oil is transported to southern markets. I believe you are implying that it might go to the West and tie into the United States pipe line or go some way through the United States territory. This pipe line crossing of the border would have to be licensed by the National Energy Board.

Mr. Paproski: Yes, I know, but now you are saying to me, Mr. MacNabb, that the United States has taken the initiative and that the oil that they have discovered in Prudhoe Bay is going by tide water now. Is there nothing we can do? Has there never been a feasibility study on whether a transmission line through the Northwest Territories into our Western provinces and into the Chicago area would be cheaper than going down through the other way?

Mr. MacNabb: Mr. Chairman, this is exactly the type of study that is under way now. A great percentage of oil that will go through the pipe line, the construction of which has been announced, across Alaska and then transshipped by ship to the Pacific Coast of the United States will be used on the West Coast of the United States.

The next question is whether it is more economic for them to take that route down around South America—I do not think the large tankers that they would be using could go through the Panama—or, alternatively, to transship it and put it into a pipe line going west to east across the United States to Chicago. Now the alternative to that circuitous route is the route that you suggest down the Mackenzie Valley, a much more direct route, into the Chicago area of the United States and into our areas of greatest

demand. This is what the task force are studying.

Mr. Paproski: We are studying it at this time, are we?

The Chairman: Mr. Paproski, I have been letting you go on because I did not want to seem partial, but your time has been over for some minutes.

Mr. Paproski: Thank you, Mr. Chairman. I appreciate this; you have been very kind. May I ask just one last question?

When can we expect a feasibility study, and when do you think that our people will come up with some solutions? I hope, Mr. Chairman and Mr. MacNabb, that we are not going to flounder on this type of thing because this is very important. The Americans seems to have a little edge on us and I would just hope that the Department is doing everything in its power to come up with some real fast decisions in this case—because this is the kind of business where we need fast decisions.

Mr. MacNabb: Mr. Chairman, I agree but, with all due respect, at the present time there have only been three holes completed in the Prudhoe Bay area—the first two holes on which the announcement was made and since then a third one has been completed. So really the magnitude of the discovery there has yet to be clearly defined.

Another point that I might mention is the possibility of transporting this oil through the Northwest Passage. This will take some time to determine. The first trial, the Manhattan, is due for July of this year, and I think this will be perhaps the first of many. So the progress that is made on the study will be to a large extent dictated by the firming up of the reserves in Alaska as well as our own exploration programs, and the success or otherwise of the Manhattan project.

The Chairman: I have on my list Mr. Comeau, Mr. Hymmen and Mr. Gilbert. Mr. Comeau, will you proceed.

Mr. Comeau: Thank you, Mr. Chairman.

Do we have any gold deposits in Canada and, if so, where?

Dr. Harrison: There are many gold deposits in Canada, sir, and they are shown on this map that was referred to by Mr. Drolet a minute or two ago. The already producing mines and mines that have produced substan-

tially are shown clearly on the map. They are mostly in the Canadian shield but they extend from Nova Scotia through to the West Coast

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of Canada and north to the Yukon. There are 37 producing gold mines.

Mr. Drolet: Yes, as of the end of 1967. They are in Ontario, Quebec, British Columbia and the Northwest Territories. There was one in Manitoba but it closed last year. There are more in Quebec and Ontario.

Mr. Comeau: How are the deposits standing up? Do we have large deposits or is there a possibility of our running out of gold soon?

Mr. Drolet: Well, we are not going out of gold. There is probably a lot more gold to be mined in this country, but since World War II we have not done any serious prospecting for gold in this country.

Mr. Comeau: Why?

Mr. Drolet: For one simple reason, that it is not paying—and nobody mines anything unless there is a big profit to be made. To mine gold is not a paying proposition. To mine an ounce of gold in this country now costs anybody between \$40 and \$45 an ounce and the price that you receive for it is \$35 U.S. dollars. Since we have some gold mines in some communities and a lot of people working in them, the government, wisely, has created the emergency gold mining assistance to pay the difference.

Mr. Comeau: Why is it so costly to mine?

Mr. Drolet: No, it is not that costly to mine.

Mr. Comeau: You said that it costs...

Mr. Drolet: It costs \$40 to \$45 to produce an ounce of gold in the gold mines that we have in this country. The gold mines that we have are mostly old ones, they are deeper and the extraction methods are a little bit old in comparison with the new metal mines like copper or nickel. Then the cost of wages and everything have gone up. Prices of most metals have also gone up so they are able to pay more money to the employees. But in gold mines, with a set price of \$35, they cannot pay more.

Mr. Comeau: Yes, but the price is certainly higher than an ounce of coal and they seem to keep mining this.

Dr. Harrison: I might say, sir, that this is purely an economic proposition.

Mr. Comeau: Why is it that we are still using old methods of producing gold then?

Mr. Drolet: Because the changeover would be more expensive and also that most gold mines do not lend themselves to the large scale open pit type of operation. You know, some years ago we were working copper mines that contained at least 2 or 3 per cent copper; now we are mining copper ores that contain only .5 or .6 per cent, one-half of 1 per cent, because we have new methods and these deposits lend themselves to large operations of the type of 25,000 or 50,000 tons a day. However, we cannot do that in the underground type of mining of gold. The only way it may be paying now to produce gold in Canada is where you have a base metal mine with a gold by-product. That comes as a nice profit. While you are working the copper, the lead or the zinc you may have some gold, silver and platinum.

Mr. Comeau: Have you ever investigated gold deposits in Nova Scotia, for instance? I do not see it shown on your map.

Mr. Drolet: The Geological Survey of Canada has done a lot of geology in Nova Scotia and they have found very little as far as metals are concerned. It is mostly non-metallic minerals. I am not aware of any gold.

Mr. Comeau: Oh, there is—there is some in my constituency. I do not know how big it is but I know there is.

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Dr. Harrison: Gold, Mr. Chairman, was originally mined in Nova Scotia. In fact it was the miners and prospectors from Nova Scotia who flooded into the Cobalt and, later on, into the Timmins and Sudbury areas and helped to develop that country; but today the gold mines that we know of are of too low a grade to be mined economically.

I might point out, Mr. Chairman, apropos the question of economics, that most of the gold mines were developed in Canada at a time when \$35 gold was a fairly good price. I can remember working as a mining engineer for 56 cents an hour. I do not know what you get for 56 cents an hour today. The prices have gone up dramatically for labour and for all other costs, but the price of gold is fixed; so there is inevitably a gradual squeezing in on the gold mines.

Mr. Comeau: I have another question. As departmental policy have you been concerned with discovering new mines, or new resources, to develop that we call the disadvantages areas of Canada, or the designated areas? For example, I can think of the Maritime provinces, and some sections of Ontario and even out West. Would some of the activities of your Department be involved in this?

Dr. Harrison: We do not attempt, sir, to discover mines, or actually to do the prospecting. We try to provide the basic information on which it is possible for mining companies or petroleum companies to make more detailed studies.

For example, a few years ago some of our people were interested in geochemical methods of exploration on a large scale. These were all tried out in the Maritime areas as a means of providing the data first in the Maritimes, and we used them also as a pilot project.

Similarly, in the Kirkland Lake area, we in co-operation with the provincial government of Ontario, have carried out special studies to try to develop new techniques which may lead to the discovery of new mines in that area. Our Department does not of itself do the prospecting, but we supply basic data and methods.

Mr. Drolet: Mr. Chairman, may I add just one word. At a meeting recently with the Prospectors and Developers Association of Canada I mentioned this problem of regional development in Canada, and of some specific areas that have been designated. It would be nice if more prospecting could be done in these areas. Last year \$19 million was spent in Canada on prospecting and exploration. The mining companies who invest this money do not care about designated areas. They only go where there are indications of the presence of minerals, where the geological formations are most favourable. These geological formations are indicated on the geological maps that are produced by our Department.

Mr. Comeau: So you would say, then that in Nova Scotia, or in the Maritimes, there are no indications of great developments of gold, or deposits other than coal and a little bit of salt.

What about the new uranium deposits that have recently been found in Quebec? Is this a fact? There was a program on the CBC which caused some controversy. Would you care to elaborate on that?

Mr. Drolet: I can only elaborate on what you already know and on what I have read myself. Our Department does not receive first-hand reports on these discoveries because mineral resources belong to the provinces in which they are located, but I know that very favourable formations have been discovered in the general area described as the Mont Laurier district.

The company, Canadian Johns Manville, had a very large exploration program in this area. As you have mentioned, the CBC made a lot of film of this exploration program, and they came out one day with the news that a new discovery had been made. The day after, the President of Canadian Johns Manville, Mr. Carl Lindell, also announced to the public that they had found radioactive minerals—in

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other words, the nature of the mineral was radioactive—but the extent of the mineral discovery and whether or not there was a mine there, he was not yet sure of. What he meant was a deposit it would be economic to mine. That is all we know about it.

Mr. Deakon: What about the Wollaston Lake area of Saskatchewan?

The Chairman: Order, please.

Mr. Comeau: I think my time has expired, anyhow, Mr. Chairman.

The Chairman: I was going to say, Mr. Comeau, that I now have a watch in front of me, which I did not have when Mr. Paproski was speaking.

Mr. Deakon: What about the Wollaston Lake area of Saskatchewan?

The Chairman: We are not having supplementaries, Mr. Deakon.

Mr. Deakon: I am sorry.

The Chairman: Order, please. Mr. Hymmen?

Mr. Paproski: Let us have a little continuity here. You are talking about uranium. I do not want to interject any supplementaries, but the gentlemen is talking about uranium and about the exploratory area in Quebec. A member of your own party, sir, has asked whether, the Minister or the witness has any information about the Wollaston Lake area. I think that is a relevant question.

The Chairman: Mr. Paproski, I would just like to say that your chairman is a very neutral individual. In this particular case he is proceeding according to the rules laid down by the Steering Committee.

Mr. Paproski: I appreciate that, sir.

The Chairman: On the second round, all members will have an opportunity to ask supplementaries.

Mr. Paproski: I concur with your, sir; I think you are very neutral.

The Chairman: Mr. Hymmen?

Mr. Hymmen: Thank you, Mr. Chairman. The second round can start very shortly.

Mr. Chairman, I have a question relative to fuels research, which I think comes under the Department of Mines. The 1967-68 report mentions two laboratories, the Canadian Explosive Atmospheres lab and the Canadian Combustion Research lab. Where are these two facilities located?

Dr. Harrison: These are now on the Corkstown Road, sir.

Mr. Hymmen: They are?

Dr. Harrison: Or there is the imminent possibility of their being in operation. I am not positive that they are completely transferred.

Mr. Hymmen: As the Chairman has already mentioned, we hope to visit that facility. I ask the question as a follow-up of one I asked the Minister. I have some interest in air pollution, and some important work has been done in the latter lab on air pollution.

I now turn to the polar Continental Shelf project that was mentioned briefly by the Minister in his statement and covered a little more fully in the Annual Report. This is a matter which is of great interest. Can Dr. Harrison, or someone, give us a little more information on this?

Dr. Harrison: Mr. Hymmen, the polar Continental Shelf project was started about 10 or 12 years ago for the express purpose of co-ordinating the work being done in the off-shore areas of the Canadian Arctic islands.

It has now become a co-ordinating agency for a great deal of activity that is being carried out not only by this Department of government but by other government departments, by universities and, in some cases, by industry, in attempting to co-ordinate,

through logistical arrangements, planned operations, and so on, to make the most efficient use of this very high-cost area.

It now operates on a budget of about \$1.75 million to \$1.8 million a year. Much of this is for aeromagnetic surveys and various other specialized geophysical surveys. A great part of the cost is for aircraft that are used to fly the parties of the Department involved in the polar shelf project and, to a degree, for assisting other agencies that may be working in the area.

Its contribution to the development of the Canadian North has been great. It has carried out such studies as research on methods of hydrographic survey in ice-covered waters, or in waters that are partly ice-covered. It has supported and carried out geophysical surveys of all kinds; and topographical, geologi-

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cal and biological surveys—just about everything; and it is continuing to do so.

Mr. Hymmen: With the very great interest being shown in the United Nations and elsewhere in the utilization of the resources of the seabed—and this is the polar continental shelf project—is there any activity being carried on by this Department or other agencies of government on the continental shelves on the east or west coast?

Dr. Harrison: Yes. I should think a very great deal more work is being done on the east coast shelf, where there is a submarine environment, than probably anywhere else in Canada. This really comes on the marine sciences side—the water side of the study. But there are a good many activities going on, including a small-scale submarines traversing and picking up samples from the bottom, operating small drills and things like that.

Mr. Hymmen: Mr. Chairman, perhaps we can come back to that under marine sciences later on. So that Mr. Deakon can put his question, I will pass at this point.

The Chairman: I have Mr. Gilbert, Mr. Smerchanski and Mr. Mahoney. Did you wish to be placed on the list, Mr. Deakon?

Mr. Deakon: I will pass.

The Chairman: Mr. Gilbert?

Mr. Gilbert: Thank you, Mr. Chairman. Through you I would like to direct a few questions to Mr. Drolet.

Mr. Drolet, my colleague asked certain questions on the Carter Report and you indicated that you have had an experienced and expert staff of economists making studies in that field. Have your economists made the study with regard to the Watkins Report on foreign ownership and control as it pertains to the mines that we have in this country?

Mr. Drolet: We have not made a detailed study of the Report, but we have read it. We have not made a special study nor have we been asked by any department to do so.

Mr. Gilbert: Have you any information on the ownership of mines that we have in Canada?

Mr. Drolet: Yes, I do have a rough idea. As a matter of fact, we publish at the end of this Report every year on the mineral industry in Canada the results of a detailed study of foreign control and ownership of the various mining, metallurgical and petroleum industries. In round figures the extent of foreign ownership in the Canadian mineral industry is over 60 per cent in mining and about 65 per cent in gas and petroleum. The percentage of foreign ownership and control in the gas and petroleum industry has declined in recent years due to greater Canadian participation in the pipe line industry.

Mr. Gilbert: Now of that 60 per cent foreign ownership in mining what approximate percentage would be American-owned?

Mr. Deakon: Mr. Chairman, could we have a copy of that book for the members of the Committee?

Dr. Harrison: These were not distributed, sir. This is one of the publications illustrated on that panel at the back of the room.

Mr. Deakon: Is it possible, Mr. Chairman, for members of the Committee to have one?

Dr. Harrison: Indeed it is.

Mr. Gilbert: Mr. Drolet, would you answer my question now.

Mr. Drolet: I do not have detailed figures for specifically mining and metallurgy. The figures I have here are from the Dominion Bureau of Statistics for the total industries in

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Canada. Even in this case the detailed figures for shares of individual countries are available only for the end of 1965, at which time

total foreign investment was about \$30 billion. To answer your question specifically on countries, about 80 per cent at that time was owned by the United States of America and some 12 per cent by the United Kingdom. The balance was mainly held by Japan, The Netherlands, Belgium, Luxembourg and Switzerland. I must say that in the last couple of years Japan has increased its share of foreign investment in this country.

Mr. Gilbert: Do you know specifically in what fields, Mr. Drolet?

Mr. Drolet: I do not know specifically, but I could give you DBS figures for all the industries in Canada. However, from my going around the country—these are not official figures of the government—and analyzing the various reports on mining companies that I know, I think about 60 per cent or $\frac{3}{4}$ is in the hands of the Americans, $\frac{1}{4}$ in the hands of the United Kingdom and the remaining $\frac{1}{4}$ in the hands of all other countries.

Mr. Gilbert: Have you any idea who owns the major share of the potash industry in Canada?

Mr. Drolet: Several of the potash mines in operation in Saskatchewan are owned by American companies. Recently there was also a consortium formed called Alwinal, which is made up of French and Germans. Cominco also recently entered the field of potash as well as Noranda Mines. So we have Canadian companies also operating potash mines in Saskatchewan. However, up until a few months ago they were all in American hands and controlled by American interests.

Mr. Gilbert: Turning to the Emergency Gold Mining Assistance Act, Mr. Drolet, I notice that there is a decrease in the amount of the assistance—a change of \$400,000 this year compared to last year. What is the specific reason for that—the closing of mines?

Mr. Drolet: Yes, the closure of some mines. You see, EGMA is really doing its job by helping the mines to die slowly and in an elegant manner. So because we have less gold mines in Canada the emergency assistance of \$15 million that we give may be less this year. Also, there were some mines which up until now had a cost below \$26.50 per ounce but now that their cost is going higher than that amount they also will receive assistance. Up until recently over 60 per cent of the gold produced in Canada was under assistance.

There were only a few gold mines which, because of their economic position, did not receive assistance and they account for about 18 per cent of the gold production. Also, 18 per cent of the gold produced was not eligible for assistance because this gold was a by-product of some base metal mine. Noranda Mines, for instance, is a copper mine but they also produce a large amount of gold.

Mr. Gilbert: What is Canada's position in gold production in the world? Is it third?

Mr. Drolet: I think we are the third largest producer in the world, after South Africa and the United States.

Mr. Gilbert: The U.S.S.R.

Mr. Drolet: Yes, the U.S.S.R.—excuse me.

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Mr. Gilbert: Would you say that the Special Drawing Rights of the International Monetary Fund are having an effect on the gold mining industry of Canada?

Mr. Drolet: I do not know.

Mr. Gilbert: That is being more naive than anything else. That is all at the moment, Mr. Chairman.

The Chairman: Mr. Smerchanski?

Mr. Smerchanski: Thank you, Mr. Chairman. I first want to make a general observation and then ask the witness some questions.

First of all let me congratulate the witness on the excellent knowledge and background he has of the mineral industry.

I think that most operating gold mines in Canada today are, as stated by our witness, uneconomical. And this is a wonderful illustration of why a profit cannot be extracted from the majority of the present operating gold mines. If it was not for the Emergency Gold Mining Act there would be many people displaced and unemployed. We must bear in mind that these very same gold mines did have a tax incentive and were exempt from taxation for the initial three-year period, and also were allowed depletion.

Mr. Chairman, I would like to point out very strongly that any action as a result of the Carter Report to stifle or to suppress the three-year tax incentive or depletion on mines, is only an illustration of what will happen in our over-all mining industry in Canada, as is now evident and illustrated by

our depletion and dying-down of the operation of our gold mines.

The witness also stated that there were some \$19 million in new prospecting per year.

Mr. Drolet: I said \$90 million.

Mr. Smerchanski: You said \$90 million? I stand corrected, Mr. Chairman, because that tickles me that much more.

Mr. Chairman, in the Carter Report I think there has been a grave error and a grave injustice perpetrated onto the mining industry in Canada, because when you have \$90 million of new money going into prospecting, and when you consider all the labour and the material that goes into this prospecting—a good percentage of this generates tax dollars to the federal government—I think that there should be no question as to continuing the three-year tax exemption and continuing the depletion on new mines. I will come to my question in a minute. I have 10 minutes, I think, Mr. Chairman, and I am entitled to them.

A fallacy exists among some of the Members of Parliament in reference to tax incentives and depletion allowance, Mr. Chairman. It is very important to face up to the fact that much of the foreign capital that comes into Canada—into the field of prospecting—if it were not expended in Canada, it would be expended in other countries, and we would be left wanting and desiring people to develop and explore our mineral resources.

I would like to point out that first of all you have to go out in the field and prospect. Then you have to survey, and then you have to find the deposit and analyze whether it is going to be economical or not. Then you have to develop it, and then you have to bring it into production. I think that we have to weigh very fairly the results of all these efforts, and that the people who have placed their dollars on the line in the initial stages are entitled to a fair return for the gamble that they have taken. And I condemn the Carter Report on everything it has come up with in reference to mining, in terms of questioning the continuation of the three-year tax exemption on new mines and giving them a depletion allowance.

Mr. Chairman, we deplete buildings in business. In the course of conducting everyday business we allow a five per cent depletion on buildings, and yet the Carter Report sees fit to question the depletion of a wasting asset

from the ground that we will never be able to recover. So on these bases, Mr. Chairman, I would like to ask the witness, in regard to these foreign and American companies that are coming into Canada to explore and develop our mineral resources, including the potash fields of Saskatchewan, to what extent has the Canadian government given the U.S. companies assistance in terms of grants, subsidies, or any other cash bonuses to encourage them to prospect in Canada?

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Mr. Drolet: You are asking specifically what we have given to the American companies?

Mr. Smerchanski: Or to any foreign companies coming into Canada to prospect for minerals or develop our resources. What kind of assistance in dollars do we give them?

Mr. Drolet: None. First, I must say that the right to prospect in Canada is in the hands of the province, and one province or another can have special schemes to help prospectors. I know, for instance, that in Saskatchewan there is a program for assistance to prospectors. The Department of Indian Affairs and Northern Development also has various schemes that encourage prospecting. But there is no discrimination; it is given to an American, to a Canadian, to an Englishman, or a person from Quebec.

Mr. Smerchanski: Mr. Chairman, what I ask is, specifically to foreign owned and U.S. companies, what dollar bonus do we give to these people to come and prospect in Canada?

Mr. Drolet: None. The bonus they receive is from the American government, because their system of taxation allows them to write off the expenditures they incur here in prospecting in Canada. And moreover, in the United States, according to U.S. legislation, you do not have to be in mining to write off these expenditures.

Mr. Smerchanski: Mr. Chairman, the other item I would like to bring up is that after the three-year tax exemption, the ordinary mining company is subjected to the same type of 50 per cent federal tax contribution—or is assessed on the basis of 50 per cent—as any other company. I think that many of us forget and overlook the fact that every mining company, after three years when it is through the tax-free period, contributes 50 cents out of

every dollar of profit it makes to the federal government in terms of taxes. Is this right?

Mr. Drolet: This is right. I would say even a little bit more than 50 per cent. According to my own calculations it is about 52 per cent.

Mr. Smerchanski: I think, Mr. Chairman, that it is this sort of thing that has to be appreciated. The development of new mines in Canada, the development of our natural resources in Canada, is a very difficult problem. It is not an easy one. There are many dollars spent in it before one can begin to realize a profit, and I, at times, certainly feel very frustrated when I find that many of our colleagues in the House of Commons seem to take the position that all a person has to do is

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to walk out of his back door with a pick and he is going to discover a gold mine, or a copper mine, or some other mineral deposit.

I did want to bring this out, Mr. Chairman, because I think that some place, somewhere along the line, the Carter Report—whoever prepared the brief for them, whatever witnesses they examined—was written on the basis of something like “the goose that laid the golden egg”. If the Carter Report is implemented into mining it will kill “the goose that laid the golden egg”. Our entire development of mining in Canada has been developed by free enterprise, based on a three-year tax-free period, and based on the proper depletion allowance.

Mr. Chairman, I would like to ask the witness whether in some instances, if the economics of a marginal mineral deposit is such that the profit picture for that particular development is going to be just a matter of profit or loss, there should be some consideration given by the federal government, and through this Department, to increasing the depletion allowance and possibly giving some additional monetary help, which in turn will generate a far greater dollar value in taxes that will come from the employment that this property will provide and the material and the tax on all this material that will come in. Do you agree with this on marginal deposit, that there should be some additional incentive given to develop marginal deposits or not?

Mr. Drolet: If you want my personal feeling, if a mine does not have sufficient grade in the ore to be opened and to be a paying proposition we should not open it.

Mr. Smerchanski: Mr. Chairman, I certainly will accept that because it plays right into my hand to demonstrate strongly that the Carter Report should not be implemented. Let us leave the development of our natural resources on a free enterprises basis and we will develop more labour and more jobs to manufacture the material, equipment and supplies in Canada.

In closing, Mr. Chairman, seeing that you have a rule that we cannot speak again, I again want to compliment you, Mr. Drolet, on your excellent background knowledge and the replies that you have given. You are well briefed on it and I want to congratulate you.

Mr. Drolet: Thank you.

The Chairman: Mr. Mahoney.

Mr. Mahoney: Mr. Chairman, before I ask a couple of questions of Dr. Harrison, I think this can only be answered by a personal expression of opinion, but the last witness indicated that he felt there was some difference between the Canadian and the man from Quebec. I would like him to elucidate on that particular answer if he would care to.

An hon. Member: In a line of jest?

Mr. Mahoney: In a line of jest if necessary but whatever...

Mr. Drolet: Are you asking me that question?

Mr. Mahoney: Yes, sir.

Mr. Drolet: It is because I had in the back of my mind that in the Province of Quebec we were talking about incentives or crown companies. The only place in Canada where there is a crown company going into prospecting is in the Province of Quebec: SOQUEM—Societe Quebecoise d'exploration Miniere.

Mr. Mahoney: A crown corporation of the province.

Mr. Drolet: That is right. So I said even to a company coming from Quebec.

Mr. Mahoney: I see. Does the public of Quebec have an opportunity to invest in that company, or is it a provincial organization?

Mr. Drolet: No, the SOQUEM receives \$1.5 million per year from the provincial government.

Mr. Mahoney: Thank you. Dr. Harrison, I have just a couple of questions. Firstly, the Prime Minister indicated in the House of Commons recently that the whole matter of a continental energy policy is being considered and negotiated in Washington, D.C. He specifically indicated that oil, gas, coal and uranium are under discussion. I do not want you to answer anything that you do not feel you should, but if you feel you can I would like you to answer the question as to whether or not the matter of hydro electric energy and water resources are under discussion in Washington.

Dr. Harrison: Mr. MacNabb is the gentleman responsible for energy development.

Mr. MacNabb: Mr. Chairman, the meetings that have taken place have discussed all areas of energy of common interest to both countries and this certainly includes electrical energy.

Mr. Mahoney: Hydro electric and water resources.

Mr. MacNabb: I say electrical energy generally, whether it be produced from hydro power or thermo-electric power. We should make sure when we say "water resources" we are talking here only of electrical energy and not water per se.

Mr. Mahoney: This is the next question because obviously it leads to that. When you talk of electrical energy you are definitely including hydro electric energy?

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Mr. MacNabb: Yes. Mr. Chairman, when the energy gets into the transmission lines you cannot tell whether it was generated from a hydro site or from a thermo-electric site.

Mr. Mahoney: Fair enough, but I suppose the next question then is, when you get to hydro electric generation of power are these discussions covering the matter of water resources? If you cannot answer it, please say so. I will be glad to ask the Prime Minister.

Mr. MacNabb: I can say, Mr. Chairman, there are a number of areas across the border between Canada and the United States where we do have exchanges of energy now and where we do have joint programs going forward. For example, the Minister's statement mentioned the study which has now commenced on the Yukon. We are working

with the United States authorities to assess what markets may be available, either in the United States or Canada, to use the power which could be developed in the head waters of the Yukon River system. This is just an example of a hydro site which is of common interest to both countries.

Mr. Mahoney: May I take it that as far as you are concerned, or as far as it is within your competence to answer my question, the matter of water resources as opposed to hydro electric energy is not under discussion in Washington?

Mr. MacNabb: That is right. It is not.

Mr. Mahoney: Thank you. The next question I have is in regard to the administration of the oil industry, the oil resources that fall within the competence of the federal government. Right now, briefly, we have three federal departments dealing with petroleum and natural gas, the Department of Indian Affairs dealing with oil and natural gas that fall within Indian reservations and so on, the Department of Northern Development dealing with petroleum and natural gas in the territories and the Arctic Islands, and the Department of Energy, Mines and Resources dealing with petroleum and natural gas in its offshore context.

Would you feel that it would be desirable from the point of view of the government to rationalize its administration of the oil and gas resources that it possesses and to centralize these in one department rather than expecting the industry to deal with three separate departments, three separate sets of rules and regulations, depending on where these resources are located?

Mr. Deakon: On a point of order, Mr. Chairman. Indian Affairs and Northern Development is one department.

Mr. Mahoney: They are two departments with one Minister, according to my understanding.

Mr. Deakon: Yes, but it is one department.

Mr. MacNabb: I believe, Mr. Chairman, that the same unit of the Department of Indian Affairs and Northern Development administers all of this.

Mr. Mahoney: That could be.

Mr. MacNabb: Dr. Crosby informs me this is correct.

As to the regulations, I assure you that every effort is made to have regulations uniform to the two departments with which the companies have to deal.

Mr. Mahoney: Really, I do not suppose that it is too possible when you are dealing with offshore as opposed to surface rights to be very uniform, is it?

Mr. MacNabb: May I ask Dr. Crosby to comment on this?

Mr. Mahoney: I would appreciate it.

Mr. MacNabb: Dr. Crosby heads the resource administration division of the department which is responsible for the administration of the offshore work.

Dr. D. G. Crosby (Chief Resource Administrative Division, Department of Energy, Mines and Resources): Perhaps I should explain that at one time the off Canada lands, which means all federal lands within the Northern Territories and in the offshore, were administered by one department. With the split in responsibilities at the beginning of 1966 the offshore was separated from the land areas. This had certain advantages in that it enabled considerable attention to be placed on the differences of the problems involved in these two areas. You are quite right in saying that there are differences. However, the regulations as such that we are operating under, have been specifically designed so that they can apply to both areas of activity. In other words, there is a deliberately designed range within them, so that both departments actually operate under the same set of regulations.

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Mr. Mahoney: This is Energy, Mines and Resources and Indian Affairs and Northern Development.

Dr. Crosby: That is quite right, sir. It is necessary from time to time to alter regulations particularly with respect to an area such as the offshore because things are moving very rapidly. We are learning a great deal very quickly and we have to meet these changing circumstances as they arise. As a matter of fact, technology is proceeding so rapidly that it is quite a job to keep up with it these days. Therefore, we do have to revise these regulations from time to time. However, for the time being both departments are actually using the same set.

Mr. Mahoney: May I ask you whether or not the industry has any input as far as the formulation of your regulations is concerned?

Dr. Crosby: Yes, they do, sir. Whenever we anticipate a change of any significance in the regulations, to ensure that this change is not strictly a theoretical type of thing but actually does meet the practical requirements of the industry which, after all, is doing the work, we do discuss the concept of what we have in mind with the appropriate petroleum and mining associations. We do not however allow industry to actually draft these regulations. This is our responsibility.

Mr. Mahoney: Obviously. I think it is very pertinent now that our new Conservation Act is being adopted for the Northwest and Yukon Territories, and the point that I am trying to establish is that industry has up until now had some input—not the responsibility, obviously that is yours—in the regulations that have been adopted.

Dr. Crosby: Yes, Mr. Chairman. The discussions that led up to this Act, Bill S-29, have gone on now I believe for approximately ten years. A great many people have worked on it and there have been numerous consultations, notably with the Canadian Petroleum Association. So that the Act would, we hope, incorporate the best characteristics of legislation now outstanding elsewhere in Canada or in the world. We do feel it is quite an excellent Act by modern standards.

Mr. Mahoney: I have one more question relative to the questions asked immediately previously by the hon. member from Provencher.

In respect of the incentives offered to the resource industries here in Canada—the three-year tax exemption plus depletion allowances offered to the mining industry and the depletion allowance only offered to the petroleum industry—do you feel that each industry ought perhaps to be treated separately and that where a three-year tax exemption is valid in the case of one industry perhaps it is not in the case of another; and on the other hand do you feel that depletion allowances as presently preferred under the tax laws not only of Canada but of the United States as well are pretty well essential to the orderly development of our mineral resources?

Mr. Drolet: If I could make a little resumé of your question, you ask should the incen-

tives be by commodities? For instance, in the case where we have so much zinc produced in Canada, where we have so much known potash deposits, you ask should we still give incentives to new mines in potash and, new mines in zinc. The second part of your question is whether the incentives should be by regions. It may be a greater incentive to somebody who is located in the Northwest Territories but not as great an incentive for somebody who will open a new mine near

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Toronto. This is your question. Then, should the depletion allowance be in perpetuity—should a small mine or a big mine have it for 100 years, only 50 years, or only a certain number of years related to the capital money that it has invested? These are all the questions that are being studied in detail by the experts looking at the Carter Report.

Mr. Mahoney: Marvelous answers. That gives rise to far more questions than answers.

The Chairman: Mr. Ritchie.

Mr. Ritchie: I have one question arising out of Mr. Smerchanski's questioning. Is there any significant difference between depletion allowances and so on in United States and Canadian law and is this a factor relative to mining in Canada?

Mr. Drolet: Yes, there is a difference. There is a schedule for various items and I could give you a detailed answer on that.

Mr. Ritchie: I am mainly interested in whether the American tax structure substantially helps their companies compared to Canadian companies.

Mr. Drolet: No. In general, sir, the incentive system and the system of taxation for mining in Canada is the best in the whole world. However, there are a few exceptions, like our recent three-year exemption here in Canada. We are now beaten by the Irish people who give a 20-year exemption. However, other countries of the world who now have new schemes, like Australia and various other countries, are copying our system here.

Mr. Ritchie: If we made substantial revisions of our mining taxation laws as suggested, I believe, by the Carter Report—I am not an expert in this—would these revisions have to take into consideration the taxation laws of adjoining countries, particularly the United States?

Mr. Drolet: Oh yes, we certainly do that, sir. You know, the best incentive that we have here in Canada is 4 million square miles of land, most of it highly favourable for the presence of minerals of all kinds. The second biggest incentive that we have is a stable political climate where laws do not change every second month. The third incentive is sound mineral legislation. If any other country in the world offers more than that, has good geological formations, then the big international companies will go there. There are many other countries in the world which have mineral resources as large as ours—Africa, for instance, and Australia has tremendous resources. If they come to Canada it is because it is better to do business here.

Mr. Ritchie: In other words, you say that major revisions do have to take into account the taxation laws of other countries in the mining industry?

Mr. Drolet: Yes, sir—because we are in competition with other countries also.

Mr. Ritchie: Thank you.

The Chairman: The last one on the list is Mr. Whiting.

Mr. Whiting: The witnesses stated that all mining operations would receive the three-year tax exemption. Is that correct?

Mr. Drolet: All new mines. And a new mine is not just a hole in the ground. Sometimes people will call a hole in the ground a new mine but, according to us, it is not a new mine and does not receive the three-year exemption. Sometimes it is only an extension of a new mine. So that is the work of the

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people in the Department of Energy, Mines and Resources. We have a special legislation group that studies the application of a mining company who wants to receive the status of a new mine. We study that and we make a recommendation to the Department of National Revenue. If we think it is not a new mine the Department of National Revenue always agrees with us. If we say it is a new mine they may disagree according to the precedence or the legislation and then there is an interdepartmental committee that sits and makes a final decision. We give the answer to the mining company. We say "No, it is not a new mine", or, "Yes, it is a new mine". If

they do not like our decision they can go to the Exchequer Court. Once in the while we lose a case. We have lost one recently.

Mr. Whiting: This applies to quarries.

Mr. Drolet: Quarries? The Act says that we do not give this three-year exemption to bedded deposits.

Mr. Whiting: Pardon me?

Mr. Drolet: Bedded, in beds, like limestone or sandstone; these are bedded deposits. In some cases it is very difficult to determine if it is a bedded deposit or a nonbedded deposit, so we have a group of experts from the Geological Survey of Canada who go on the property and tell us if it is a bedded or a nonbedded deposit.

Mr. Whiting: Why would you make that distinction?

Mr. Drolet: The legislator said that at the beginning because he did not want every little gravel pit, every little limestone quarry, and things like this, called a mine.

Mr. Whiting: Some quarries represent quite a substantial investment and they could not be classed in that category.

Mr. Drolet: Yes, sir, I understand that very well. I have very often wondered what the difference is between a large open pit that produces 15,000 or 20,000 tons of limestone a day and an iron ore mine, for instance, that produces the same quantity. This is not the way the law reads and the legislators should look at that.

Mr. Whiting: Thank you. Would I be putting you on the spot if I asked you if you think this legislation should be changed?

Mr. Drolet: Yes, at times we have had cases where we do not see it, but you have to think about all the small gravel pits here and there that will suddenly fall under this legislation.

Mr. Whiting: Yes, but you are well aware that there is a substantial difference between a gravel pit and a quarry. Would this apply to a granite quarry? How would you handle that?

Mr. Drolet: Granite is the English rock.

Mr. Whiting: Which is not in layers.

Mr. Drolet: No, it is not in layers, so I suppose it would...

Mr. Whiting: Be given a tax exemption.

Mr. Drolet: Yes, if it is a new mine. I think so.

Mr. Whiting: Fine. Thank you very much.

Mr. Mahoney: I have one very short supplementary on exactly the same point the witness was dealing with. Is it the same committee of your Department that goes around surveying mining deposits and mining operations that determines whether or not it is an operation that falls within the percentage depletion regulations or a cost depletion regulation of the Department of National Revenue, because again the same arbitrary rules appear to apply, if it, is a bedded deposit it is one thing and if it is not it is something else. I must confess it may not be fair to ask you this question and if it is not, please say so.

Mr. Drolet: We have the reports from the mining companies to that effect and they are sent to the Department of National Revenue. We also have the Inspector of Mines who, particularly in the case of the gold mine, for instance, visits the underground in order to see exactly what is exempt and what is not exempt and what goes into the cost of producing an ounce of gold. In the case of all the other incentives, we also visit mining properties but we do not have a crew that goes around to all the mines in Canada. For instance, in very special cases when there is a difficult decision to be made I always go with a couple of engineers from our Department and also the people from the company and we spend a lot of time underground or in the pit examining everything. I must say that our experience with the mining companies has

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been that they are very honest in this respect. Most of the mining companies are large companies and we do not play with that too much.

Mr. Mahoney: I suppose the question I was asking is does your Department advise the Department of National Revenue on the decision its makes relative to the type of depletion a mining operation is entitled to, or does it not?

Mr. Drolet: Not the type of depletion. It is well written in the law how much it is. It is 33½ per cent of this and this and this. There is a list.

Mr. Mahoney: Then you do advise the Department of National Revenue on this subject?

Mr. Drolet: To a certain extent, yes.

Mr. Mahoney: Thank you.

The Chairman: Mr. Mahoney, are you finished?

Mr. Mahoney: Yes, thank you.

The Chairman: Is there a disposition on the part of the Committee to pass these votes tonight?

Some hon. Members: Agreed.

Mr. Gilbert: Mr. Chairman, there is no such disposition on our part. We have really just started...

Mr. Harding: I have some further questions I would like to ask.

Mr. Langlois: Let us finish the questions tonight.

Mr. Gilbert: It is now a quarter after 10 and we have had a long day. Leave it open until the next meeting. Let us take a vote.

Mr. Harding: I understood that tonight we would only deal with mines and we have had a little bit on water and a little bit on oil.

The Chairman: We planned two meetings to cover these topics, in any event.

An hon. Member: We feel it has been well covered.

An hon. Member: It has been very well covered.

Mr. Gilbert: Mr. Chairman, we are confined to 10 minutes of questioning and we only got started. We just threw a few slow pitches on our part.

Mr. Langlois: Mr. Chairman, I know it is only 10 minutes at a time, but there are lots of hours yet to come when we can have more 10-minute periods.

The Chairman: Gentlemen, perhaps we could pass these at the next meeting and then go on to water. If we have to spend another meeting at this we will lose a meeting on something else. We may get it in before the Estimates go back to the House. I would ask the officials to come back to our meeting next Thursday evening at 8 o'clock. We may have another meeting on Tuesday. We will meet again at the call of the Chair, gentlemen. Thank you very much. The meeting is adjourned.

HOUSE OF COMMONS

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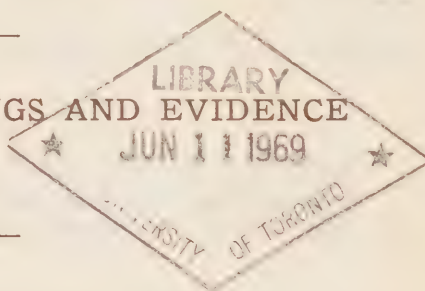
STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE
No. 20



THURSDAY, APRIL 24, 1969

Respecting

Main Estimates (1969-70) of the Department of Energy,
Mines and Resources

WITNESSES:

(See Minutes of Proceedings)

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice Chairman: Mr. K. R. Hymmen

and Messrs.

Aiken,
Beaudoin,
Chappell,
Code,
Comeau,
Deakon,

Harding,
² Lind,
Mahoney,
Moores (*Bonavista-
Trinity-Conception*),
Orange,

Paproski,
Ritchie,
Roy (*Timmins*),
Serré,
¹ Sulatycky,
Whiting—20.

Gilbert,

(Quorum 11)

R. V. VIRR,
Clerk of the Committee.

Pursuant to S.O. 65(4)(b)

¹Replaced Mr. Jerome on April 29, 1969.

²Replaced Mr. Smerchanski on April 29, 1969.

[Text]

MINUTES OF PROCEEDINGS

THURSDAY, April 24, 1969.
(20)

The Standing Committee on National Resources met this day at 9:40 a.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Chappell, Code, Deakon, Gilbert, Hopkins, Hymmen, Jerome, Mahoney, Orange, Paproski, Ritchie, Roy (*Timmins*), Serré, Skoberg, Whiting—(15).

Witnesses: From the Department of Energy, Mines and Resources: Mr. G. M. MacNabb, Assistant Deputy Minister (Energy); Dr. John Convey, Director, Mines Branch; Dr. R. B. Eiver, Acting Chief, Mineral Resources Branch; Dr. A. T. Prince, Acting Assistant Deputy Minister.

The Chairman outlined changes of the last report of the Subcommittee and the changes were agreed to by the Committee.

The Committee resumed consideration of the Estimates of the Department of Energy, Mines and Resources.

The Chairman invited Mr. MacNabb to introduce his officials and the meeting was opened for questions.

Votes 15, 20 and 25 were carried.

The Chairman then called Votes 40, 45 and 50 relating to Water and Renewable Resources.

And the questioning continuing; the Committee adjourned at 11:00 a.m. until Tuesday, April 29, 1969.

R. V. Virr,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Thursday, April 24, 1969

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The Chairman: Gentlemen, I see a quorum. I will call the meeting to order. When we adjourned our last meeting we were studying Mines, Minerals, Energy and Geosciences Votes 15, 20 and 25.

First of all, I want to report that your steering committee met yesterday and air transportation plus other factors prompted us to decide against going to Sydney next week to look over the heavy water plant. Instead, there is a possibility, if we can arrange it, that we will be going to Calgary later on for some hearings on oil—on the petroleum and gas part of it—so that we will be better informed for the National Energy Board when they come before us.

Could I have the unanimous consent of the Committee to delete the Sydney trip from the minutes of your steering committee which I read out to you at the last meeting?

Some hon. members: Agreed.

The Chairman: Thank you, gentlemen.

I am going to call upon Mr. MacNabb, the Assistant Deputy Minister, to introduce the people who are here with him and then we will continue questioning on Votes 15, 20 and 25. Mr. MacNabb.

Mr. G. M. MacNabb (Assistant Deputy Minister, Energy Development, Department of Energy, Mines and Resources): Thank you, Mr. Chairman. On my right is Dr. Convey, Director of the Mines Branch, who is here on behalf of Dr. Harrison, the Assistant Deputy Minister of Mines and Geosciences. On his

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right is Dr. Elver of the Mineral Resources Branch, who is here on behalf of Mr. Drolet and then Dr. Prince, Acting Assistant Deputy Minister for Water; Mr. Code, the Senior Personnel Adviser; Dr. Hodgson, Director of the Observatories Branch; Mr. Toombs, Sen-

ior Oil and Gas Adviser; Dr. Crosby, Chief of the Resource Administration Division and back behind is Mr. Allen, Senior Financial Adviser.

The Chairman: Thank you, Mr. MacNabb. I am now open for questions. Mr. Gilbert.

Mr. Gilbert: Mr. Chairman, my question is directed to Dr. Elver and it is pertaining—

Mr. Chappell: Mr. Chairman, before Mr. Gilbert starts, could I rise on a point of order? Would you mind summarizing in a general way, please, what we are covering this morning?

The Chairman: Yes, Mr. Chappell, I probably should have given you the pages. If you have your Blue Book with you, Vote 15, Mines, Minerals, Energy and Geosciences is listed on page 54 and deals with administration, operation and maintenance including the administration of the Explosives Act, the purchase of air photography, the expenses of the Interdepartmental Committee on Air Surveys, the National Advisory Committee on Control Surveys and Mapping, the Canadian Permanent Committee on Geographical Names, the National Advisory Committee on Research in Geological Sciences, the National Advisory Committee on Research in Mining and Mineral Processing, the National Committee for Canada of the International Astronomical Union, the National Advisory Committee on Astronomy and authority to make recoverable advances not exceeding the amount of the share of the United States Government of the cost of binding annual reports and maintaining boundary range lights.

Vote 20 deals with construction or acquisition of buildings, works, land and equipment, the details of which can be found on page 63.

Vote 25 deals with grants as detailed in the estimates and contributions in accordance with the terms and conditions specified in the sub-vote titles listed in the details of the estimates. These details will be found on page 65.

Mr. Gilbert: Thank you, Mr. Chairman. My question is directed to Dr. Elver and it pertains to the opening statement by the Minis-

• 0945

ter, Mr. Lang. I would refer you to page 11 of that statement, Dr. Elver, and the first paragraph which says:

... The solution to the problem of meeting future demands for products derived from Canada's minerals, fuels and metals will depend largely on how well research programs can produce accelerated technological advances that can be applied to the industry. The over-all objective of the Mines Branch, therefore, consists in ensuring a sound scientific base for the new technology, and in stimulating the application of advanced technology for the extraction, processing and use of minerals and fuels for the improvement of metal products.

Then the next paragraph says that of importance in the next five years will be:

... the relocation of components of the Mines Branch to a site on the Corkstown Road. These new laboratories are the result of a long-term policy to improve the facilities for conducting research to aid the Canadian mineral industry in a direct and practical manner.

At the last meeting, Dr. Elver, we had Mr. Drolet give an answer with regard to the fabrication of resources and his example was the asbestos. He indicated the difficulties we have with regard to fabricating asbestos because of the weight problem and transportation problem. If I have read correctly this statement by the Minister, he indicated that the object of the Mines Branch will be to develop research so you can get the best technological plans, designs or schemes with regard to these. What has been done to date and what are the future plans of your Department?

Dr. R. B. Elver (Acting chief, Mineral Resources Branch, Department of Energy, Mines and Resources): Perhaps, Mr. Chairman, Mr. Gilbert's question is more appropriate for Dr. Convey who represents the Mines Branch.

Dr. John Convey (Director, Mines Branch, Department of Energy, Mines and Resources): Mr. Chairman and Mr. Gilbert, your question sort of runs around a little and covers an awfully wide spectrum. Is there any particular phase you are interested in? Would you

like me to discuss the answer with respect to asbestos, some other minerals or do you just want a general answer?

Mr. Gilbert: I wonder if you would start off with a general answer, doctor, and then I will get into particulars arising from your answer.

Dr. Convey: The purpose of the Mines Branch, as such, is to assist technologically in the development of the Canadian mineral industry. In order to do this we have, first of all, research into mining. In other words, to improve our mining conditions, particularly with respect to the stability of the operations both underground and above ground. Then we have the facilities for the processing of the mineral. Aside from that we have another group who are interested in the actual structure of the minerals. Their interest primarily is to obtain at least an educated guess on the best possible means for the breaking down of the mineral which would then lead into the extraction of the metals that you are interested in. This is done in the Mineral Sciences Division. We have a Fuels and Mining Practice Division and they are interested in coal, gas and oil, and last, but not least, the Physical Metallurgy Division who are interested in the end products, that is, the metals and metal alloys.

The work of the Mines Branch is one wherein we fill, to a certain extent, what one would call gaps in technology. We work very closely with the industry. Whatever the industry is doing we do not duplicate. Wherever possible our work is aimed at the long-term proposition. That being so, you will find that our interest—as those who visited the Mines Branch on the Corkstown Road two days ago saw in respect of heavy oils and in respect of combustion. Therefore our func-

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tion is one wherein we look ahead and try to assist the industry to improve their techniques and, at the same time, create the facilities which would enable one to look after the resources, in other words, an economic recovery and in so doing one gets rid of waste. That is a very general answer.

You mentioned asbestos and specifically there, we work very closely with the asbestos industry in so far as they have co-operatively come together in the study of their product. For many years one wanted long fibres for asbestos and there were a lot of short fibres associated with asbestos for which there was

no market. That has gradually changed. We can use the short fibres today but there are a lot of unknowns in the asbestos industry that have to be worked out and that is being done co-operatively by the actual mining industry, the University of Sherbrooke and ourselves.

Mr. Gilbert: What about nickel, Dr. Convey?

Dr. Convey: We are particularly interested in the processing of some of our lower grade nickel ores, nickel sulphides. The work there, again, is in close co-operation with the nickel producing companies, the International Nickel Company and Falconbridge. Concerning the actual end use of nickel itself, today we are interested in a steel which uses nickel and has strength characteristics far beyond the average steel as we know it today. Again this is a co-operative effort.

Mr. Gilbert: Has there been any development with regard to potash?

Dr. Convey: Yes, in the actual mining of the potash, we have a group working with the mining companies in Saskatchewan on the stability of their working operations. In other words, we are doing a lot of mining research on stress mechanics. We are interested in the actual mining techniques for we recognize that the future of mining will be one where we are going to have rotary diggers. We are trying to develop these. However, that means getting the equipment people involved.

When it comes to the processing of the potash itself, in our mineral processing operations we are assisting in the purification of the potash product. This work is in close association with the Saskatchewan Research Council.

Mr. Gilbert: Thank you, Dr. Convey. That is all for the moment, Mr. Chairman.

The Chairman: Shall Item 15 carry? Mr. Skoberg?

Mr. Skoberg: Mr. Chairman, I just have one question. Under professional and special services on page 59, I see an increase from \$28,000 to \$297,300. Could we have an explanation of that?

Mr. MacNabb: Mr. Chairman, the \$28,000 amount for 1968-69 was entirely within the new Energy group as it then stood within the Department for consulting services. This year the estimates include both the policy group of

the Energy sector and the Resource Administration Division which previously was in the Mineral group. So the \$297,300 includes the consulting work that may be required on energy policy as well as consulting services which may be required in relation to the off-shore oil and gas resources.

Mr. Skoberg: Sir, when you ask for bids for professional and special services, are they put out as tenders or are they invitational? Do you have a special list of names that you are using for these types of services?

Mr. MacNabb: It is very seldom done, Mr. Chairman, on the basis of tender. In the case of professional engineers, for example, there is a minimum per diem charge that they are allowed under the Association of Professional Engineers. We try to keep abreast of the companies with particular expertise in the vari-

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ous areas that we are interested in and we receive written presentations by those companies, usually on request from us.

Mr. Skoberg: In other words, there are no competitive bids as such even if you did put them out for tender? Is that what you are saying?

Mr. MacNabb: That is not correct. We would have to assess not only their estimate of what the job would cost but the qualifications of the firm to do it. We could quite conceivably turn to a company that submitted other than the lowest bid if we felt that with their qualifications they would have a much better appreciation of the type of problem we were faced with and that their bid was a more realistic one.

Usually the presentations made by the companies are on a per diem basis. We can set an upper limit that we do not want to exceed but the company will normally bid on a per diem basis.

Mr. Skoberg: In other words, just to have this quite clear in my mind, when you ask for any special services or for any consultants the variance between the resultant applicants that you have back in is very small because they are based on a per diem basis. Is this correct?

Mr. MacNabb: The difference between their monetary estimates will usually vary just as a

result of their different appreciations of the type of job and how it should be attacked.

Mr. Skoberg: There is a very little competition then in so far as these services are concerned.

Mr. MacNabb: In terms of dollars and cents on a per diem charge, there is little competition.

Mr. Skoberg: There is little?

Mr. MacNabb: There is little competition, yes.

Mr. Skoberg: In other words, it is a "closed shop" in the words of the layman.

Mr. MacNabb: There will be changes. Some companies may exceed, for example, the minimum charge set down by the profession, but when you look at the over-all costs on a per diem basis, there is not usually much difference between companies. The difference, as I say, arises as a result of the different approaches by the companies to the problem.

If I could use an example of the study which is under way on the Bay of Fundy tidal power, we interviewed many, many consultants for that job and eventually, I believe, we had a group of up to at least 12 consultants working on it. However, this was a very novel problem of trying to harness the tides. It was not a problem that could be solved in the routine hydroelectric development fashion. So it was up to the engineering and management committee responsible for that job to assess the approaches that the various consultants had presented, whether they felt that approach was the one most likely to come up with the unique solution needed in that particular case.

Mr. Skoberg: The profession then really sets the rate consistent with the services they are going to render.

Mr. MacNabb: They set the minimums.

Mr. Skoberg: They set a minimum rate.

The Chairman: Dr. Convey, you had a comment?

Dr. Convey: Mr. Chairman, I would just like to add to the answer that, although this says professional and special services, for instance, in the mines branch most of the amount that we have down is taken up by the

Canadian Corps of Commissionaires and safety features associated with the buildings, and so on. It is not too often that one gets into the actual hiring of professional consultants as such. The word "profession" there may have been just a little misleading.

Mr. Skoberg: I have just one other question, Mr. Chairman. In regard to Mr. Gilbert's question on potash in Saskatchewan, do you spend any time in the exploratory work of transportation of potash and solution mining and the likes? Or, is this all left with another department?

Dr. Convey: No, we are particularly interested in the transportation feature of all minerals. We have an active interest in pipeline. On the solution mining we have worked closely with the one particular mine in Saskatchewan that is operating on that basis.

Mr. Skoberg: In the method of transportation, is there any money allowed in the budget to assist the University of Alberta in their work on the pipeline method of transporting potash?

Dr. Convey: We have a technical interest but the actual government financing comes through the Department of Industry.

Mr. Skoberg: Yes.

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Dr. Convey: We have no money in our estimates for it.

Mr. Chappell: Mr. Chairman, I want to ask about the National Advisory Committee on Research in Mining and Mineral Processes. To whom should I direct my question, please?

Mr. MacNabb: Dr. Convey.

Mr. Chappell: Dr. Convey, would you tell me, please, of whom that advisory committee is composed, its budget and what it does?

Dr. Convey: I am sorry I do not have the names of all the individuals but I will try to remember them.

Mr. Chappell: Are they government employees or outside help?

Dr. Convey: No. There are six from the actual mining industry. There is a representative from three provinces. There are three

representatives from our universities. There are two federal government representatives as well as the Chairman, who is the Deputy Minister of our Department, and myself as the Vice Chairman. We can give you all the names, if you wish.

Mr. Chappell: No. That is sufficient, you have identified them.

Dr. Convey: There are six from the mining industry, three from the provinces, and three from the universities. These will rotate every three years, one-third of the Committee will be replaced each year. The budget for that particular Committee, the actual cost to the government, will be the travel expenses which amount to something of the order of \$5,000.

Mr. Chappell: The service is free, is it?

Dr. Convey: The service is free, given by the industrial and provincial representatives.

Mr. Chappell: Would you tell me, please, what they do and how much time they spend doing this?

Dr. Convey: We have exactly two meetings up to the present time. These have been formative meetings but in addition to the National Committee itself we have created subcommittees; one associated with mining operations themselves, the second with the processing of the mineral, and the third with respect to education. These subcommittees are meeting outside of the main committee itself. We hope that in the year coming we will have about three one-day meetings.

Mr. Chappell: I am sorry, I am not clear on the size of the budget?

Dr. Convey: The budget merely pays the expenses of the university people themselves who attend the meetings.

Mr. Chappell: They do not have any funds to do any research or anything of that nature.

Dr. Convey: In research funds, what we have in our estimates for the Mines Branch is the sum of \$112,000 which we give to universities in the form of grants for research aid.

Mr. Chappell: Who decides where that is to go? Is it your Department, the Mines Branch or the Advisory Committee?

Dr. Convey: Up to the creation of this Committee there existed two small committees

who met once a year, went through these applications and recommended who should receive the funds. Now the applications will go through the National Advisory Committee itself.

Mr. Chappell: When was this National Committee set up, please?

Dr. Convey: We came into being last fall, around October.

Mr. Chappell: Is it the plan now that this Committee will decide what research is to be done and how the funds are to be allotted?

Dr. Convey: They will have the final say as to where the funds go, but the main purpose behind the Committee is to co-ordinate all the research which is underway at present in the mining industry both in industry and government laboratories. That is their main function.

Mr. Chappell: That is all the Canadian research?

Dr. Convey: That is Canadian research.

Mr. Chappell: Research in industry or in government and in universities?

Dr. Convey: And in universities, yes: the three areas.

Mr. Chappell: What is the largest amount that could go to this research?

Dr. Convey: At the present time \$112,000.

Mr. Chappell: Is any of that diverted to safety research, or is it all to do with the better processing or handling of the raw materials?

Dr. Convey: One can say that some of it goes to safety research in connection with the

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study of dust control in mining and milling operations. It is a small amount, something of the order of \$5,000 or \$6,000

Mr. Chappell: Would you agree with me that this is a very small amount indeed for research in a country where we have so very many mines?

Dr. Convey: Yes, and I can assure you that the applications that are with us at the present time amount to something like \$630,000. All we have is \$112,000.

Mr. Chappell: And over what period have those applications been piling up?

Dr. Convey: Just the past three months.

Mr. Chappell: Just since this Committee was formed?

Dr. Convey: No. We have had \$100,000 in our estimates for something like four years.

Mr. Chappell: Have you always used it?

Dr. Convey: Oh, yes, every cent of it. We have always had at least three times the value in applications than we have had funds to meet the same applicants. This year it is even worse: we are reaching the sort of very difficult position of having to close off some of the research.

Mr. Chappell: My time must be nearly up, but could you give me a thumbnail sketch of what research is going on, in what universities or what industry or what government? What is in progress at the moment?

Dr. Convey: That is rather a broad, searching question. However, when it comes to mining research there is the University of British Columbia, University of Alberta, Queen's University, McGill University and Laval University.

Mr. Chappell: None at Sudbury?

Dr. Convey: No, none at Sudbury. Those grants I am mentioning go merely to programs associated with mining operations or with mineral processing. When it comes to extraction metallurgy, where one is getting into the actual physical chemistry of the chemical metallurgical area, their grants for the most part come through the National Research Council.

Mr. Chappell: Is there liaison between the National Research Council and this National Advisory Committee?

Dr. Convey: Oh, yes, there is very close liaison. I answered your question and said that we had \$112,000 that we grant for mining and metallurgical research, but there is another: I would say the government grants probably close to \$400,000 which goes into the other areas of chemical extraction and physical metallurgy. The Mines Branch does not give those grants, but we are associated with both NRC and the Defence Research Board who handle them.

Mr. Chappell: Thank you.

The Chairman: Mr. Hymmen.

Mr. Hymmen: Yes, Mr. Chairman, I have a question. The Committee, of course, was invited several days ago to visit the Corkstown Road centre. Some of the members attended and we saw some of the important work being carried on in thermal combustion and stack emissions in the one building, and only a cursory examination of some other buildings. Someone mentioned, I do not recall who, that this was phase 1 of a four-phase program in regard to the re-location of laboratories. Would it be possible for Dr. Convey or someone to explain briefly what phases are covered presently and what is the future program?

Dr. Convey: Mr. Chairman, the movement of the Mines Branch facilities out to the Corkstown Road was initiated around 1959 with the idea that the Mines Branch would vacate the Booth Street area and be completely re-located in the west of Ottawa.

At that time, in order not to interrupt the work of the Branch, it was felt that we should move in phases. Phase 1 was associated with our Fuels Research and Mining Research divisions. That particular phase was chosen for the simple reason that their facilities in the Booth Street area were condemned and their operations, which include explosives, were a little hazardous, to say the least, in their performance in the Booth Street area.

The second phase was to move the Mineral Processing and our Technical Services divisions. That is only in the planning stages at present.

The third phase was to move the Physical Metallurgy Division.

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The fourth, and last one was the Extractive Metallurgy, the Mineral Sciences and the Administration divisions of the Mines Branch.

Those are the four phases to be carried out over a period of ten years. We are ten years behind in our schedule. We have, as you have witnessed, moved the first phase.

Mr. Hymmen: Are all these facilities that you mentioned presently located in the Booth Street area?

Dr. Convey: Yes. But prior to the movement of phase 1, of course, we had an explosives testing group near Uplands airport, and they have now been brought together with the other parts of the branch in the Corkstown Road complex.

Mr. Hymmen: I mentioned initially the important work being done on stack emission with regard to air pollution. I wonder if you could tell me—and I know we may be treading into another department—if there is any other research being carried on by the federal government with regard to air pollution.

Dr. Convey: As far as air pollution is concerned, I think you will probably find we are the only ones in that. We came into it indirectly through our interest in combustion studies on the burning of fuels. I should indicate that we do work very closely with the Department of National Health and Welfare. They have always been directly associated with us.

Mr. Hymmen: Perhaps that was not a fair question, because I could direct that question on the Department of National Health and Welfare, but it was just as a point of interest.

This is my final question. We saw in one building some of the equipment being constructed with regard to petroleum research and someone mentioned during our visit that although there probably could be, there was not too much co-ordination between the private petroleum interests and the government operation, although there was some interest and certainly liaison. I realize that there is another facility in Calgary and I also realize that the private petroleum interests' establishments have their own research facilities. I wonder if someone would care to comment on this.

Dr. Convey: With respect to the research into the fuels industry, particularly the oil industry that you have mentioned, our work is directed at the processing of the heavy bitumens, as we pointed out, for which there is no market at the present time. We are looking into the future of some five or ten years from now.

The actual industries themselves naturally are interested in their day-to-day problems and their immediate economic returns on the oil that they are processing. They are quite secretive with respect to some of their processes, but I must admit that on the occasion-

al visits wherein their professional staff come to Ottawa and our staff visit the Sarnia area and so on there is a closer liaison than appears on the surface.

Mr. Hymmen: Thank you.

The Chairman: Mr. Serre.

Mr. Serre: Thank you, Mr. Chairman. I have a question relating to Mr. Chappell's line of questioning. You mentioned that the National Advisory Committee on research in mining and mineral processing was composed mainly of industrial people. I wonder if you would not consider the possibility of having a committee set up of government representatives to study more deeply the feasibility of having local processing plants where we have big mining industries at present producing raw material and creating a large flow of capital, especially in northern Ontario in the Sudbury district where, as you know, there are big nickel and copper mines but hardly any local processing and refineries. I was wondering if you are studying the possibility of looking into the economic feasibility of having local processing plants.

Dr. Convey: Whenever we go into the question of the processing of a particular mineral, we must consider the local area and the availability of fuel, for instance. That is always very much to the forefront of our thinking with respect to processing in a particular area. To lead on from your question, our main mining research as such is performed in Elliot Lake. We have our laboratories up there and I do not doubt that in the

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future there is a possibility that in a particular area we may have to put some of our fuels research group in direct relationship with the area concerned. There are certain areas in Canada in which we have actually looked into the possibility of extending the life of a mine. I am thinking now of the Kirkland Lake area, for instance, where we are processing a lot of the tailings from some of their old mines with respect to possible extraction of residual silver. So that really, in a sense, there is a continuing program wherein we are very closely linked to particular areas.

Mr. Serre: Are there any incentive grants to encourage large companies to establish local processing plants?

Dr. Convey: The only main incentive that I can think of comes through the industrial grants, through NRC and through the Department of Industry, by which companies are encouraged to do research. Then there is the PAIT program through the Department of Industry which actually assists companies in the development of particular parts of their operations. I would have to say that the federal government is doing a lot with respect to incentives in encouraging industries to establish themselves. I have had the pleasure of sitting on three of these committees that consider the grants, and in two cases we are now running out of money. In the third one, which is PAIT, there are still sufficient reserves to consider other applicants. It has been encouraging to see the number of companies that have become a little more research-oriented in their thinking, and this in turn leads towards the improvement of their future and their future existence.

Mr. Serre: Could you give us any idea of the approximate amount of such grants that were handed out last year?

Dr. Convey: The totals?

Mr. Serre: Approximately.

Dr. Convey: I do not like guessing at it, but it is several millions of dollars. The grants themselves vary from small amounts of \$50,000 up to quite substantial grants of several hundred thousands. The government part of those grants for the most part is 50 per cent of the cost.

Mr. Serre: Thank you very much.

The Chairman: Shall Item 15 carry? Mr. Gilbert.

Mr. Gilbert: Back in the spring of 1966, the Honourable Arthur Laing indicated that there was a loan fund to be set up for development of mineral resources in the north and that he had a fund of \$3 million. Was this fund set up and is it operating today?

Dr. Convey: I do not know. Mr. Chairman.

Dr. Elver: Mr. Chairman, the \$3 million you are referring to I think came to the Department of Indian Affairs and Northern Development's exploration incentive program, which is part of a much broader program that that Department has. The sector which I am representing this morning has on-going liai-

son with the Department's development group and we participate with them in decision-making on allocations to particular companies and in joint projects pertaining to northern road expenditures and other related activities pertaining to mineral development. I do not have the details on the \$3 million that you referred to.

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Mr. Gilbert: This was the amount that was set forth in the press release that he made in the spring of 1966 when he said:

This new incentive would be in the form of a Loan Fund designed to aid Canadian companies and individuals engaged in exploration for oil, gas and other minerals.

He also said:

The total amount of the Loan Fund would be limited initially to \$3 million per year, with possible increases in succeeding years dependent upon the overall results of its application.

I was just wondering how it has developed. Has there been a grant of \$3 million a year?

Mr. Elver: We have not been responsible for keeping track of that particular program in that department. When they ask for advice, or if certain situations arise on which we feel we might have a comment, we have a relationship which works quite well, but I cannot comment on this \$3 million. Possibly somebody from the energy sector might.

Mr. Gilbert: Perhaps Mr. Orange might have something to say on this.

Mr. Orange: I was just going to say really what has already been said. The fund is working—I am going by recollection now—and they have used up their allocations annually. It has resulted, I think, in a great deal of increased activity in the exploration field in the North in the past two or three years. In their estimates the Department of Northern Affairs are looking at \$4 million for the coming fiscal year. It is based on a 40 per cent grant of exploration costs which are repayable if a mine is developed.

Mr. Gilbert: And forgiven if it is not.

Mr. Orange: Yes.

Mr. Gilbert: Mr. Drolet pointed out the other day that in Quebec they have a Crown corporation which has been set up for purposes of exploration and development in that province. Is there any working relationship between this Crown corporation in Quebec and your Department in Ottawa?

Mr. MacNabb: I think Dr. Elver again is the person to answer that.

Dr. Elver: The company you are referring to is known as Soquem. It is a Crown corporation, as you say, and it operates primarily as a normal mining exploration firm would, and from time to time they do come to Ottawa for information, and for consultations, formally and informally, just like other exploration firms would. But there is no special relationship with that company.

Mr. Gilbert: What is the feasibility of setting up a federal Crown corporation which would do much the same work as the Quebec corporation? Is it feasible?

Mr. MacNabb: There is a Crown agency in the form of Eldorado Nuclear, limited to the one field of minerals. There are arguments, I suppose, for and against direct involvement of the federal government in the mineral exploration field, the mineral development field. If you look at events in the world today, particularly in the uranium field, I think you find that governments as such are becoming more involved in that particular resource.

Mr. Gilbert: Well, with the trend of foreign ownership that prevails at the moment and the danger in which some of our natural resources are placed, it seems to me that it would be a role of government to set up Crown agencies to protect some of our natural resources and to develop them.

Mr. MacNabb: Mr. Chairman, if I could speak personally, I feel that it would be preferable if the control on the resource was exercised through agencies such as the National Energy Board who have the right to licence or not to licence exports of gas and electricity. And perhaps control could be most effectively exercised at that stage, rather than the government becoming directly involved in the development of the resource itself.

There is a role to play in assistance in certain areas, and I think the Panarctic exploration endeavour is a good example of

that, where the situation is difficult and quite expensive.

Mr. Gilbert: Thank you, Mr. Chairman. Mr. Paproski.

Mr. Paproski: Mr. Chairman, I wish to ask Dr. MacNair or Dr. Convey a question about the uranium find that has just been disclosed in the Wollaston Lake area, and I would be most interested to know if the government has had any of its people there to find out

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what exactly is going on and if it is as great a find as has been disclosed by Gulf. Are we going to have any control of the uranium that is going to be processed in this area?

Mr. MacNabb: Mr. Chairman, as to knowledge of the find itself, as far as I know, our knowledge is limited to what it would seem is made available to the public. I have a recent release by Gulf Oil of Canada Limited. It is terse and to the point. They say that they have discovered:

... a highly promising vein-type deposit in northern Saskatchewan where three drill holes have encountered high-quality ore-grade mineralization. . . Additional rigs are being moved into the area to speed the evaluation of this deposit. In New Mexico, . . . Gulf has delineated a commercial-sized deposit of uranium and engineering studies are in progress to determine the feasibility of exploitation.

As far as the quality of the find is concerned, that is the extent of it, to my knowledge.

Mr. Paproski: Was there any further communiqué, other than that one, Dr. MacNabb?

Mr. MacNabb: There may have been elaboration by the Board Chairman, Mr. Brockett, on this question. You mentioned control. The control once again would be exercised at the export stage through the Atomic Energy Control Act or the export-import Act, and, of course, the development would be licensed by the federal government. The exploration and mining would be licensed.

Mr. Paproski: Thank you.

Votes 15 and 20 agreed to.

The Chairman: Shall Vote 25 carry?

Mr. Skoberg: Mr. Chairman, just one question on Vote 25. On page 68 of the Estimates, in the contributions to the provinces, pursuant to agreements entered into with the approval of the Governor in Council, etc., I notice that the estimate is down considerably for this year. Is there very little expectation now on the part of the Board that there will be any money needed for further development of roads leading to resources? Or has there not been any demand from the provinces in this regard?

Dr. Elver: That item comes under the allocation for the mineral development sector. This is a program which is finishing this year and I think the last payment will be made about September. There is no more construction going on and they are closing out the books with respect to Newfoundland. An additional program for roads to resources has not been brought forth. This particular program is with the provinces.

Mr. Skoberg: Has there been any attempt by the provinces to renew this particular program?

Mr. MacNabb: No. The provinces are always interested in funds, of course.

Mr. Skoberg: What per cent of the cost did the previous program, the one that is being

• 1030

completed this year, provide in the construction of these roads, just roughly, not money-wise, just the percentage?

Mr. MacNabb: As I said, the last expenditure being made are to wind up accounts primarily with Newfoundland. The work is primarily all done. We are just waiting to have clearance to take care of the expenditure receipts, and this is in the hands of the accountants.

Mr. Skoberg: You say the program is coming to an end this year. Roughly, what percentage did the federal government pay the provinces of the cost of construction of these resource roads? Was there a percentage formula used?

Dr. Elver: Yes. Will someone check me on that? Was it not something like 75-25, federal and provincial?

Mr. MacNabb: We can get that information for the members, Mr. Chairman.

Vote 25 agreed to.

The Chairman: I will now call Votes 40, 45 and 50, which will be found on page 55 of the Blue Book. The details will be found on pages 69 to 74.

Water and Coordination of Renewable Resources Programs

- 40 Administration, Operation and Maintenance including the expenses of the Saskatchewan-Nelson Basin Board and the Atlantic Tidal Power Programming Board including the recoverable expenditures relating thereto, recoverable expenditures incurred in respect of Regional Water Resources Planning Investigations and Water Resources Inventories, authority to make recoverable advances in amounts not exceeding in the aggregate the amount of the shares of the Provinces of Manitoba and the Province of Ontario of the cost of regulating the levels of Lake of the Woods and Lac Seul and the amount of the share of provincial and outside agencies of the cost of hydrometric surveys, and the expenses of the National Advisory Committee on Geographical Research and, the National Committee for Canada of the International Geographical Union and the National Advisory Committee on Water Resources Research \$34,240,000
- 45 Construction or Acquisition of Buildings, Works, Land and Equipment including authority to make recoverable advances in amounts not exceeding in the aggregate the amount of the shares of provincial and outside agencies of the cost of hydrometric surveys \$12,859,000
- 50 Grants as detailed in the Estimates and contributions in accordance with the terms and conditions specified in the sub-vote titles listed in the details of the Estimates \$5,635,600

Total—\$52,734,600

Before we start receiving questions on this section I think it would be well if we had an understanding in the Committee that after we finish the questioning on Votes 40, 45 and 50 we could pass those votes and leave Vote 1 of the departmental estimates open so that we could have a period of discussion on the Canada Centre for Inland Water at Burlington after we return from visiting the site, providing we are able to visit it. At the

moment arrangements are rather indefinite. Is this agreeable to the Committee?

Some hon. Members: Agreed.

The Chairman: All right. I am prepared to receive questions on Votes 40, 45 and 50. Mr. Skoberg?

Mr. Skoberg: Mr. Chairman, I would like to have some clarification on the extent of the interest of this Department in looking into the water resource commissions of the various provinces. I have just returned from my area of Moose Jaw and there is a river there which has dams on it and I understand the resource commissions are attempting to do something with the railway company that has had control of these dams for the past number of years. I understand they do not want to give up their water rights to the dams and they have spent absolutely nothing in trying to repair these structures. Of course, during the latest period of flooding in that area there was nothing to prohibit or to retard the water from coming through because of the lack of maintenance, and I wonder what action your Commission has taken in trying to assist the provincial resource commissions to bring this to completion so that the water rights and the maintenance of these dams can pass over to the provinces or to the federal government.

Dr. A. T. Prince (Director, Inland Waters Branch, Department of Energy, Mines and Resources): In connection with this particular problem, Mr. Chairman, I am not fully familiar with the details but, speaking generally, a province can approach the federal government for assistance in the matter of control and management of its water resources. There is legislation which the Department administers in this connection, for example, under the Canada Water Conservation Assistance Act and if a province desires such assistance it can apply for it under the terms of this Act. In this particular instance, to the best of my knowledge, there has been no approach to the Department or to the government for assistance.

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Mr. Skoberg: You will provide the necessary legal talent to try to solve some of the problems that the individual provinces have in this regard. I am just using this Moose Jaw incident as an analogy of what could probably be found in many other areas of Canada where people have had control of water

rights and do not wish to give them up and also do not wish to make any repairs or do any maintenance work in respect of dams that used to be on that watercourse.

Dr. Prince: Mr. Chairman, if the question is one of licences and water rights within the province alone, I would say that this is entirely within provincial jurisdiction. If it affected interprovincial or international waters, in the first instance we could be involved and in the latter instance we would be involved.

Mr. Skoberg: But you deal directly through the water resource commissions of the various provinces?

Dr. Prince: If they apply for assistance. I believe you referred, sir, to the question of legal assistance. The Department of Energy, Mines and Resources is primarily interested in the engineering aspects of what might be involved and in the general administration. I do not think the question of legal assistance would come within our purview.

Mr. Skoberg: Somewhere in the Estimates I presume there is a provision for including assistance to the water resource commissions of the provinces. Which vote does this come under? I have not had an opportunity to pursue the Estimates that closely.

Dr. Prince: When required technical and scientific assistance is generally available on specific problems. If it is a matter of cost sharing in relation to engineering projects, then under the Canada Water Conservation Assistance Act, there is legislation whereby this could be done if a provincial agency—or the province itself, primarily—applied. It is not up to the federal government to interfere and offer assistance. This assistance is available on request.

Mr. Skoberg: That is fine, thank you.

Mr. Gilbert: I would like to direct some questions, Dr. Prince, with respect to the story that your Department is attempting to force the Metropolitan Toronto Region Conservation Authority to sell lands on the grounds that some of these lands are being used for recreational purposes and do not come within the ambit of the Canada Water Conservation Assistance Act. Would you give me the details on that, Dr. Prince?

Dr. Prince: Mr. Chairman, I am sure this is a very topical question. I do not know precisely. Do you have any specific questions regarding the matter or at the moment do you want a general broad comment?

Mr. Gilbert: Is it true that you are attempting to apply pressure to the Toronto conservation authority to sell back some of the lands they have acquired?

Dr. Prince: The shortest answer to that is no. To qualify this I would say that we have no official communication or contact with any conservation authority. Our official channels of reference on matters of this kind are, in this instance, through the Province of Ontario, and through the provincial agency, not the conservation authority, and certain statements have been made in the press regarding the federal government ordering conservation authorities to sell land. This is not correct simply because we have no authorized channel of communication with

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the conservation authority. I think I should deal with this further by mentioning the terms of the Act under which we operate. If the members are interested, Mr. Chairman, I have copies of the Act with me which they can refer to if it would be of any advantage to the group. The Act is designed to provide assistance to a province in controlling and regulating the flow of water in order to avoid floods. It applies entirely to the matter of conservation and flood control. It is not an Act that permits the federal government to enter into matters of recreation, to that type of requirement. Certainly the Department is extremely sympathetic to the need for recreation but when an Act has been set up and it has certain restrictions as to what it can administer, it is not within our terms or reference to expand it beyond those limits which are set by the Act. The Act is designed to provide for the engineering works and the related facilities necessary to control the flow of rivers through dams, through reservoirs, through channel improvements and the necessary access lands, so that these works can be operated. This is the sole intention of this particular Act.

Mr. Gilbert: Dr. Prince, assuming that your interpretation of the Canada Water Conservation Assistance Act is correct, I understand that grants were made under this Act from the year 1961 right up to 1967. Why would

you have a change of policy in 1968 if there is not some blame to be placed on your shoulders for not acting at an earlier time?

Dr. Prince: I think, Mr. Chairman, the explanation of the matter is that to implement and carry on the projects that were required we agreed with the province to proceed with the procurement of lands on a sort of bulk basis. Funds were advanced for this with the full knowledge of both parties that the Act required that surplus lands would be disposed of, but in order to avoid any delay in procuring the lands, and to provide as quickly as possible the flood control measures, we agreed to go ahead with it and negotiate the recoverable portions of the fund in due course.

There has been no policy change in the Act. The Act is quite clear in the matter of policy. This has not arisen within the last few weeks or months. There have been discussions and negotiations since 1965 in connection with this, and the province is fully aware of what is required under the Act. We have had a federal Ontario committee working on this, as well as on other matters concerning the Conservation Act, for the past year and a half, and among officials there has been general agreement on how these additional lands should be disposed of, or credits transferred to the continuing fund for the extension of works.

I think I should make it clear that we are not asking for lands to be sold; we are asking for the credits that are due from those lands to be credited to the fund for the extension of works which are required.

This program in metro-Toronto has not progressed very far and many things remain to be done. We are endeavouring to extend the fund by credits being received back into the fund from those lands that are not required under the Act. It is our hope that none of these lands would be sold, because we recognize the need for recreational lands; but we are not entitled to contribute to them.

Mr. Gilbert: Just how much are you attempting to recover by way of credits, Dr. Prince?

Dr. Prince: The committee's estimate at the moment for the Toronto-metro agreement is something of the order of \$1.1 million.

The Vice-Chairman: Excuse me, Dr. Prince. I was just going to suggest to Mr.

Gilbert that, according to the ruling this Committee made and agreed to, his time is up. I will come back to you, Mr. Gilbert, if there is time later on. Or have you one short question?

Mr. Gilbert: I think he should be permitted to finish his answer.

The Vice-Chairman: I thought he was finished. I am sorry.

Dr. Prince: I will be very brief, Mr. Chairman. The question of the \$1.1 million does relate to what the Committee has agreed to be surplus lands. We have proposed that the evaluation—and in fact this evaluation is—be based on the lands at the purchase price of 1961, and we have proposed to the province that a three-year deferment be placed on this arrangement so that appropriate disposal or retention of the land by the province can be

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arranged in the three-year period. This is the situation at the moment.

Mr. Gilbert: I will come back to it, Mr. Chairman.

Mr. Deakon: To delve a little deeper on the subject of Mr. Gilbert's questioning, was an agreement on this executed between the federal government and the province?

Dr. Prince: Yes, there was an agreement made with the province for the Toronto-metro program, signed, I believe, in 1961.

Mr. Deakon: Is it not true that certain lands were purchased with federal funds which were not permitted under this agreement?

Dr. Prince: In effect, in order to implement as quickly as possible, bloc purchases were obtained with the full understanding that some of these lands were surplus; this is correct.

Mr. Deakon: To your knowledge, has there been any talk, or any suggestion that part of these lands is, or is intended, to be sold by the Conservation Authority at present?

Dr. Prince: Mr. Chairman, the question of what the Conservation Authority is planning to do is not officially admissible, I would say, because our dealings are officially with the Ontario department itself.

Mr. Deakon: But you have heard no suggestion that they intend to sell any portion of these lands, especially those lying further

away from these areas which are purportedly strictly for the control of this water movement?

Dr. Prince: I have not seen the detailed plots of the various parcels of land involved. The joint committee has been studying in detail all of these land procurements and has the report in process right now. It has been agreed to in principle among officials of the two departments, and the Department of Energy, Mines and Resources has agreed in principle to what is proposed; but we have had no response officially from the province on this matter.

Mr. Deakon: Thank you. That is all.

Mr. Chappell: It is my understanding that there was a report in the press recently, relative to the land at Clairville, that the federal government had ordered some of these lands sold. I am saying what was in the press. It is my understanding that that is completely false. Is that correct?

Dr. Prince: That is correct.

Mr. Chappell: I am trying to get this straight, because I have to write some letters on it. As I understand it, the federal government's responsibility was to participate in the acquisition of land and the construction work necessary for flood control.

Dr. Prince: The acquisition of land necessary for the flood control.

Mr. Chappell: And for construction of works.

Dr. Prince: And construction of works.

Mr. Chappell: Then the province and the municipalities joined in and said they would take advantage of this where they could for recreation purposes?

Dr. Prince: This, I believe, is right, yes.

Mr. Chappell: What happened in Clairville was that they took considerably more land than was necessary for the actual flood control and the construction of works.

Dr. Prince: This, I believe, is correct, sir. We were not involved in the specific land purchases.

Mr. Chappell: As I understand it, they have 200, 300 or 400 acres more than were necessary for the actual flood control and the works.

Dr. Prince: That is correct; at least that much.

Mr. Chappell: And your position now is that you must be credited back with this extra land so that money can go to construction of works.

● 1050

Dr. Prince: This is correct, sir.

Mr. Chappell: Or, in the alternative, there would be nothing wrong with the province and the municipalities, if they so desire, simply buying that extra land and putting that money back into the pot.

Dr. Prince: All we are asking for relative to the transfer of credits, is that the province or the Conservation Authority itself pick up the 37½ per cent of federal money which is in the surplus lands, based on 1961 prices; and we give them three-year credit terms to do it.

Mr. Chappell: Yes; but to put it another way, we all agree that recreation facilities are good things to have, but the federal government has not gone into the business—at least, not under this Act—of supplying parkland and recreation land for various municipalities across Canada?

Dr. Prince: That is correct. This Act does not permit that.

Mr. Chappell: That is up to the province and the conservation authority, if they wish to do that on their own?

Dr. Prince: This is true.

Mr. Chappell: Thank you.

Mr. Hymmen: I have a very short question to ask Dr. Prince having to do with Vote 50 but with a scheme which is not shown. I have been trying to get it on the list for about three years. Dr. Prince already mentioned the lack of liaison between the federal authorities and the conservation authorities, which is perhaps one of our constitutional difficulties.

I am referring to the Grand River Conservation Authority's scheme which was presented for approval to the federal government I believe early in 1967. There was some difference of opinion on the benefits which might accrue from this scheme, there was discussion with the province and, to the best of my

knowledge, the scheme has not been resubmitted. Is that the case, Dr. Prince?

Dr. Prince: This scheme, Mr. Chairman, has not been resubmitted.

Mr. Hymmen: That is the answer to my question. Thank you.

Mr. Gilbert: Dr. Prince, getting back to the conservation problem, is it true that your department is withholding a \$5 million grant to the conservation authority until a reasonable settlement has been arrived at concerning the \$1,100,000 credit?

Dr. Prince: This is essentially true, Mr. Chairman. There has been a request for approval on, again, a bulk land purchase, I believe to the sum of \$5 million, and until there has been agreement acknowledged by the province on those lands which are in question at the moment we have felt it not advisable to proceed with this particular proposal.

Mr. Gilbert: Where are those lands situated, Dr. Prince?

Dr. Prince: I believe these lands are in the metro Toronto conservation area.

Mr. Gilbert: Dr. Prince, I am just going to relate to you the experience of the federal government back in 1958 when the federal and the provincial government of Saskatchewan undertook to develop the South Saskatchewan dam project on the basis of a 75 per cent contribution by the federal government. I understand that this project included thousands of acres of recreational land and was carried out under the Prairie Farm Rehabilitation Administration Act. Is that true?

Dr. Prince: Mr. Chairman, that particular program was not carried out by the Department of Energy, Mines and Resources and the terms of that particular agreement have no bearing on the legislation that we are referring to here.

Mr. Gilbert: Dr. Prince, even if it did not, at least you have the precedent back in 1958 where the federal government contributed to this project in Saskatchewan which included the acquisition of recreational land.

Dr. Prince: Mr. Chairman, I think I made it clear that I am sure everyone in every department in the government service

approves of recreation lands, but we cannot change the terms of the Act which we are given by Parliament to administer and since in the Canada Water Conservation Assistance Act recreation lands are not part of the subject of the Act we cannot admit them.

• 1055

Mr. Gilbert: Is it possible to find some other act under which the federal government could participate in the acquisition of recreational lands? We have this Prairie Farm Rehabilitation Act, and you would have a precedent under ARDA. Are you suggesting that it is just impossible for the federal government to participate in the acquisition of recreational lands, that you are taking sort of a narrow interpretation of the Canada Water Conservation Assistance Act and saying this is primarily for flood control and has no reference to recreational lands and therefore even though we have permitted it from 1961 to 1967 we are now going to enforce our rights under this Act.

Dr. Prince: Mr. Chairman, my answer to this is that I am not fully familiar with the terms of reference of other legislation that might apply to ARDA and PFRA. Undoubtedly there is legislation that could permit recreational lands to be included, I certainly hope that such legislation does exist but I am not familiar with it and I would not like to make a statement on that point.

Mr. Gilbert: Dr. Prince, would it not be wise to have representatives from your Department and from the provincial authori-

ties get together and just see what can be arranged rather than sort of withholding a \$5 million grant on the basis that we will not give these monies until a satisfactory agreement has been reached concerning the \$1.1 million credit.

Dr. Prince: Mr. Chairman, officials of our Department and of the Province of Ontario have been negotiating on this and other matters related to it for the past year and a half and we are hoping that we can get agreement as soon as possible so that these things can move forward.

With regard to the \$5 million program mentioned, I have no doubt that land procurement is proceeding in any case by the province and the conservation authorities. One of the clauses under our Act indicates that where a program under an agreement in the Act is not proceeding according to the wishes of the Minister we do not necessarily need to proceed. We are not trying to be difficult in this matter. I think it is a straight forward requirement for agreement with the provincial agency and I hope that that agreement can be forthcoming very soon.

The Chairman: Gentlemen, I hate to break up this discussion but we have to be out of here because there is another meeting at 11 o'clock. Mr. Gilbert still has some time left and I have Mr. Deakon and Mr. Chappell on my list.

I will adjourn the meeting. We will be meeting again on Tuesday night at 8 o'clock.

HOUSE OF COMMONS
First Session—Twenty-eighth Parliament
1968-69

STANDING COMMITTEE
ON
**NATIONAL RESOURCES
AND PUBLIC WORKS**

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 21

TUESDAY, APRIL 29, 1969

Revised Main Estimates (1968-69) of the Department of
Energy, Mines and Resources.

WITNESSES:
(*See Minutes of Proceedings*)

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and Messrs.

Aiken,
Beaudoin,
Chappell,
Code,
Comeau,
Deakon,
Gilbert,

Harding,
Lind,
Mahoney,
Moore (Bonavista-
Trinity-Conception),
Orange,

Paproski,
Ritchie,
Roy (*Timmins*),
Serré,
Sulatycky,
Whiting—20.

(Quorum 11)

R. V. Virr,
Clerk of the Committee.

MINUTES OF PROCEEDINGS

TUESDAY, April 29, 1969.
(21)

The Standing Committee on National Resources and Public Works met this day at 8:23 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Aiken, Chappell, Gilbert, Harding, Hapkins, Hymmen, Lind, Mahoney, Paproski, Roy (*Timmins*), Serré, Sulatycky, Whiting—(13).

Witnesses: From the Department of Energy, Mines and Resources: Mr. J.-P. Drolet, Assistant Deputy Minister (Mineral Development); Mr. G. M. MacNabb, Assistant Deputy Minister (Energy Development); Dr. A. T. Prince, Director, Inland Waters Branch.

The Committee permitted Dr. Prince to correct a statement made at the meeting of April 24 concerning purchases of land in the Toronto area.

The Chairman called votes 40, 45 and 50.

The members questioned the witnesses.

On motion of Mr. Gilbert,

It was agreed that study Number 8 "The Taxation of Mineral Extraction" be printed as an appendix to this day's Minutes of Proceedings and Evidence (*See Appendix "G"*).

Votes 40, 45 and 50 were carried.

At 10:15 p.m. the Committee adjourned to the call of the Chair.

R. V. Virr,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, April 29, 1969.

● 2023

The Chairman: Gentlemen, I would like to call the meeting to order officially. I believe Mr. Roy had a question of privilege. Would the Committee allow it at this time?

Mr. Roy (Timmins): To repeat, Mr. Chairman, what I said before the meeting was called to order officially, I would like to express thanks on behalf of my riding and myself to the officials of the Department who participated in any way in the negotiations and formulation of the decision of the Texas Gulf Sulphur Company to establish their smelter in our area. I hope this will be a policy eventually of government, and of all such corporations, that minerals which are extracted in this country, will be processed at the site of extraction. Thank you.

Mr. Hymmen: Mr. Chairman, I would like to say that while it is recognized that this matter is one which is purely within provincial jurisdiction, I think all the members of this Committee are very happy, knowing Mr. Roy's problem; he has talked to me privately about it and of the decision which has been made by the government of the Province of Ontario, from which other provinces may well take a lead.

● 2025

The Chairman: Thank you, gentlemen.

Mr. Aiken: Well said. I was just going to say the same thing, Mr. Chairman.

The Chairman: Before I call on Mr. Gilbert—he has still five minutes left from his questioning the last day—I believe Dr. Prince has a point that he would like to clarify for us before we get under way. Dr. Prince?

Dr. A. T. Prince (Director, Inland Waters Branch, Department of Energy, Mines and Resources): Thank you, Mr. Chairman. I have not yet seen the transcript of my testimony

from the last meeting, sir. I believe I did say that the base on which the prices of properties of surplus lands that we were referring to in the Toronto Metropolitan Area was based on the 1961 land values. What I should have said was that it was based on the original purchase price which existed at whatever time these purchases were made, which could have been 1962, 1963 or 1965, as the case may be. However, it is the original purchase price of the lands, not the 1961 base.

In connection with the continuation of the program down there, any funds recovered or any residual funds unexpended in the Canada water conservation assistance program in Metropolitan Toronto, any funds available, could be used and perhaps would be used for the procurement of additional lands. These are the two points, sir, that I would like to clarify on the record.

The Chairman: Thank you, Dr. Prince. In continuing the questioning on Votes 40, 45 and 50 of the Department of Energy, Mines and Resources, re "Water and Coordination of Renewable Resources Programs", I will now call on Mr. Gilbert to continue his questioning.

Mr. Gilbert: Mr. Chairman, before I commence my questioning of Dr. Prince, you will recall that at the first meeting of this Committee I asked Mr. Drolet certain questions concerning the tax exemptions and incentive allowances, and he was good enough to say that he would obtain that material and make it available to the Committee. He could do it either now or later, Mr. Chairman, whenever it is more convenient.

The Chairman: Mr. Gilbert, I received a letter on my desk—I believe it was this morning—on this item. A copy of this letter will be going out to Committee members. In fact, I left instructions this morning for it to go out. However, at this time I will call upon Mr. Drolet to comment on it.

Mr. J. P. Drolet (Assistant Deputy Minister (Mineral Development), Department of Ener-

gy, Mines and Resources): Thank you, If I remember correctly, Mr. Gilbert, you asked me first about the value in dollars of some incentives to the mineral industry. Then, I gave you a figure about what I thought was the value of the three-year exemption period and I said that it had a value of about \$50 million per year to the mineral industry.

Mr. Gilbert: Right.

Mr. Drolet: Then you asked what was the value of the depletion allowance to these mines. I may say that it is very difficult for us in the Department of Energy, Mines and Resources to make any calculations about these values, because depletion allowance is administered by the Department of National Revenue. This is under the Income Tax Act and we have no way of finding out exactly what are the values of these various incentives. The source of information that I have is from the briefs or the studies that were presented to the Royal Commission on Taxation, the Carter Commission, and Mr. Bucovetsky, an economist from the University of Toronto, has made a study. It is called Study No. 8, entitled "The Taxation of Mineral Extraction" and has been submitted to the Carter Commission. In this Study, Mr. Bucovetsky mentions that a sum of \$53.5 million for the year of 1961 is about the value for the percentage depletion allowance to the mineral industry. He also says that in the case of the prospectors' and grubstakers' exemption, he estimates that the annual average payment to them is of the order of \$1 million.

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In resume he says that the rough estimate of the annual revenue cost of these special provisions for taxing the extractive industries would be of the order of \$152 million in recent years. You will understand, Mr. Chairman, that I have no way of verifying these figures and I take only what is written in the Bucovetsky report. If you will permit me, I would like to add something. We are now talking about the benefits or tax savings to the mineral industry. As far as taxation is concerned, I may also add that the mineral industry pays a large amount of taxes, and I have made some rough calculations from statistics published by the Dominion Bureau of Statistics. They show that the mining industry—that is, the extractive part of the mining industry, mining and milling—pays over \$200 million in taxes every year.

If I look at the other part of the industry, the mineral-based industry, including oil, coal and industrial minerals, the taxes paid by these corporations is over \$218 million. This is for the year 1968. If I had those two amounts it gives me \$418 million for the year 1968, and if I make a calculation of all taxes paid by various corporations in Canada during the year 1968, I find a total of about \$2,593 million. So, taking a percentage, I may say that the mineral industry pays about 16 per cent of all corporation taxes in Canada. In addition to that, they also pay provincial taxes and municipal taxes. The taxes paid at these levels are equivalent to about two fifths of the taxes paid by industry at the federal level.

The Chairman: Thank you, Mr. Drolet. You may continue Mr. Gilbert.

Mr. Gilbert: I have just one further question of Mr. Drolet, with regard to the \$152 million which he referred to as the total of the special tax provisions. Of that \$152 million, Mr. Drolet, would it be fair to say that 75 per cent of that allowance goes to American firms operating in Canada?

Mr. Drolet: As you know, the problem of foreign ownership has been with the mineral industry since mining started in Canada. I have no way of knowing what is the proportion of these benefits that go to not only American owners but also to owners from other countries. I cannot remember where, now, but in Mr. Carter's report he has, a figure showing that a very high percentage of these benefits go to foreigners.

Mr. Gilbert: I think those are the only questions I wanted to ask on that particular aspect, Mr. Chairman.

Is it possible to make that special study, No. 8, available to the members of the Committee, Mr. Drolet?

Mr. Drolet: Yes, sir; I have it here, as a matter of fact.

Mr. Roy (Timmins): Could we have the author identified, Mr. Chairman?

Mr. Drolet: Yes, sir, the author is Mr. M. W. Bucovetsky, M.A. He is an economist at the University of Toronto.

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Mr. Gilbert: Mr. Chairman, with your permission, I will direct my remarks to Dr. Prince, unless there are some other questions arising out of the information of Mr. Drolet.

The Chairman: You have the floor, Mr. Gilbert.

Mr. Gilbert: Thank you, Mr. Chairman. Dr. Prince, at the last meeting, you mentioned that there was a holdback of \$5 million by the federal government to the provincial government of Ontario, because of a disagreement of \$1,100,000 between the federal and provincial governments concerning plans operated by the Metropolitan Toronto and Region Conservation Authority. Am I right in that assumption?

Dr. Prince: I think this point should be clarified. I believe there is a request for some \$5 million for the purchase of additional lands that is, the total value of the lands, including everyone's share. The federal share of that \$5 million would be 37½ per cent. If the Authority or the province wished to proceed with the purchase of those, we could not prohibit them from doing so, nor would we. It is a question of our share of that particular purchase.

Mr. Gilbert: Dr. Prince, has there been any further developments from the last meeting that we had between the Minister or officials of the Department and the minister or officials of the provincial government?

Dr. Prince: There has been no official communication to the best of my knowledge.

Mr. Gilbert: What hopes could we have with regard to resolving this problem, Dr. Prince? Wherein lies the trouble?

Dr. Prince: I mentioned at the last meeting, Mr. Chairman, that there is a joint Canada-Ontario committee that has been meeting for many months to arrive at a *modus operandi*. I think the officials have pretty well arrived at an agreement. On the federal side, essentially we have accepted the findings of this committee, but so far there has been no response from the province indicating that they have accepted the findings of the committee. So, really I think the matter rests primarily with Ontario.

Mr. Gilbert: Were they a federal committee or were they a joint committee?

Dr. Prince: It was a joint federal-provincial committee, Mr. Chairman.

Mr. Gilbert: I see. Dr. Prince, I mentioned that the federal government had participated in the Saskatchewan River project under a special act and also that there may be authority under ARDA. Has there been any suggestion, either by your officials or by officials of the Ontario government, that this may be an answer to the impasse that is prevailing?

Dr. Prince: Well, Mr. Chairman, any province can approach any federal department, I presume, regarding possible legislation by which they can be assisted. I only know what approaches have been made to our Department in this connection. I would think the ARDA program, which relates primarily to rural development activities, would hardly be applicable in the middle of Toronto; perhaps it might, I do not know. But it would be up to the province to approach whatever department is concerned with other possibilities in this direction.

Mr. Gilbert: Dr. Prince, you would not say in all seriousness that these lands are in the middle of Toronto, would you?

Dr. Prince: Well, not quite in the middle of Metropolitan Toronto; some of them are outlying some distance on the outskirts of the northern regions of Toronto Metro.

Mr. Gilbert: I think that is all the questions I have on this. Thank you, Dr. Prince.

The Chairman: Mr. Chappell, you were on from the last day. Do you wish to continue? Then I have Mr. Hymmen and Mr. Whiting.

Mr. Chappell: I will pass for the moment, please.

The Chairman: All right. Mr. Hymmen.

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Mr. Hymmen: Mr. Chairman, I have a question or two for Dr. Prince. I have before me a copy of the 1953 Canada Water Conservation Assistance Act, which we hope will soon be out of date due to the fact that the Acting Minister of Energy, Mines and Resources announced in the House today that the new act is expected by the end of this

session. I would like to ask Dr. Prince if there are any applications in the Department at present, on behalf of any province, in regard to programs under the present Canada Water Conservation Assistance Act.

Dr. Prince: Mr. Chairman, could we clarify it? Do you mean any new ones or any existing ones?

Mr. Hymmen: Any new ones or any that have not yet, been approved.

Dr. Prince: I do not believe there are any that have been submitted, which have not been considered and either approved or rejected. There is nothing pending, to the best of my knowledge, under the Act at the moment.

Mr. Hymmen: Under the Act, which I have in front of me, in Section 7 it mentions:

7. The Governor in Council may make regulations for carrying out the purposes and provisions of this Act.

Under the regulations what is the acceptable criterion with regard to the benefit ratio of any particular scheme?

Dr. Prince: Mr. Chairman, I do not believe that any specific regulations have been issued under the Act. The basic guidelines that we have, with regard to benefit cost ratio, are established in concert with the Department of Finance. We endeavour to establish benefit cost ratio of one or greater in assessing the potential pay-off from any program that is admitted under the Act. We do not encourage entering into a program which does not have a foreseeable ratio of one or more.

Mr. Hymmen: I am referring to an application of interest to me, specifically the Grand River Conservation Authority application through the province of Ontario. Under the present Act, which was established in 1953, no less than three dams have been constructed under the existing legislation. Since the application has been made by the Province of Ontario—and I have accepted the fact that the application did not meet the criteria as laid down—knowing that flood control is the most important criterion of all, I am trying to assess in my own mind why the present application is different from the previous three which were accepted under the Act.

Dr. Prince: I am not entirely familiar, Mr. Chairman, with the details. I suppose these

are the Shand, Luther and Conestoga dams. These particular construction programs were undertaken prior to my association with the Department. Nevertheless, I would think that as a basic principle under the Act, each of these projects would have been appraised on its own merits, as a project to arrive at, benefit cost ratio that would be acceptable to the Department. I presume that this was done in the case of those particular projects.

Mr. Hymmen: One of the problems which Dr. Prince mentioned at the last meeting was a lack of liaison, that I am aware of with the local authorities. This is another problem which arises from the constitutional framework, under which we operate. I know that flood control was one of the prime considerations, also water supply, stream dilution and recreation. Perhaps the Province of Ontario—and I am certainly not speaking for the Province of Ontario—perhaps it is their benefit ratios which they established in their request. It should have been revised and, as you said in the last meeting, there has been no re-application on behalf of this project, which I consider to be of importance. I do not know whether the members of the Committee can anticipate that the new water act is going to be of more or less benefit to municipalities like the one I represent. Of course, we are

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not asking Dr. Prince or anyone to tell us what is going to be included in the new legislation. Thank you, Mr. Chairman.

The Chairman: Mr. Whiting.

Mr. Whiting: Mr. Chairman, I would like to ask Dr. Prince a few questions. In Vote 50, Contribution to the Province of Ontario towards the cost of the Halton County Flood Control program—\$50,000 1969-70. I wonder, Dr. Prince, if you would be good enough to tell me any details you could on what the usage of this \$50,000 will be.

Dr. Prince: Mr. Chairman, this particular sum is in the Estimates for the current year, regarding the Halton Conservation Authority program. This program has been advanced substantially, I believe, in connection with the Morrison Wedgewood diversion and also in some channel improvements on a stream farther to the west. This particular vote, is in here, sir, to cover further payments that may

be due or expected in the completion of the approved projects under the Halton Authority.

Mr. Whiting: So, then, this \$50,000 would go to the Morrison Wedgewood creek diversion?

Dr. Prince: I believe there is a channel improvement involved in the present program as well, and it could be for either one.

Mr. Whiting: Fine. Mr. Chairman, I would like to carry on this question. Dr. Prince, are you aware that the Halton region conservation authority made three applications for channel improvements through the provincial government, and then subsequently to the federal government, and that the Wedgewood Creek channel diversion was approved? Are you also aware of the fact that the second one was supposed to be the Rambo Creek Project in Burlington and this was not approved? Yet, it follows the same criteria for which the Morrison Wedgewood Creek was given federal assistance. It seems to me that the federal government asked the province, and subsequently the province asked the Halton region conservation authority, to lump these three projects together. Approval was given to the Wedgewood Creek channel diversion; that is nearly completed as of this date; the Halton region conservation authority and the town of Burlington went ahead and did preliminary engineering on the Rambo Creek channel improvement. To this date the federal government has washed its hands of any federal participation in this particular project. I wonder, Dr. Prince, if you could tell me the reasons why this is so?

Dr. Prince: Mr. Chairman, regarding the Rambo Creek Project at Burlington, I think there are two factors involved here. One is that a considerable amount of that project—and I am recalling this from some time ago—was related to the question of storm sewer alternatives, as well as to the diversion of creeks coming into Burlington Bay from the north. This appeared to be in many respects very much of a local problem connected with the storm sewer requirements for the municipality. I believe, on this basis, that the project was not given full approval. Also, my recollection is that the Hagar Rambo Creek Project was submitted some time later than the Morrison Wedgewood, at a time when the federal government was reconsidering some

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of its policies concerning the support of local problems, rather than problems of a broader national type. I believe these two things were mainly responsible for non-approval of the Hagar Rambo, even though the Morrison Wedgewood had been approved some time earlier.

Mr. Whiting: Well, it is my understanding that the three projects were submitted at the same time, and that definite approval was given to the Wedgewood Creek diversion and approval was strongly implied—and that is the only word I can use at this particular date—in that the federal government was willing to participate in the Rambo Creek Project.

Dr. Prince: Mr. Chairman, I do not recall off-hand the details of the correspondence connected with this particular matter. I believe there has been some recent communication between the honourable member and the Minister, regarding this point. If further details, along the lines you refer to sir, are required, I am sure we can go back into the files and review the situation.

Mr. Whiting: I would appreciate it, Mr. Chairman, if Dr. Prince would supply me with the relevant correspondence on this particular project.

Dr. Prince: Mr. Chairman, I will endeavour to see that the member gets the information requested.

Mr. Whiting: That is fine, Mr. Chairman.

The Chairman: Thank you, Dr. Prince. Mr. Aiken.

Mr. Aiken: Mr. Chairman, I would like to go back for a moment to the Texas Gulf Sulphur question, not specifically, but in general. It was understood recently that the provincial government of Ontario proposes legislation which has much more strength than the present legislation to require processing of minerals within Canada, when they are extracted in Canada. Also understood was the fact that there are regulations of some strength now in effect. What I wish to ask Dr. Prince or Mr. Drolet is whether or not there is any similar federal provision that would permit regulations to be made requiring the processing of minerals in Canada that are extracted in Canada?

Mr. J. P. Drolet (Assistant Deputy Minister, (Mineral Division) Department of Energy, Mines and Resources): Mr. Chairman, the question of further processing in this country is under the authority of the various provinces in which these minerals are located, although the problem or the question of further processing is of vital interest to all levels of government—federal, provincial and municipal. As far as regulations are concerned, there are very few provinces in Canada that have specific regulations concerning further processing.

As a matter of fact, there are only three provinces: One is the Province of Ontario, about which you have all been informed recently by the new regulations which were announced by the Minister of Mines, the Hon. Allan Lawrence. Another such province is, New Brunswick, where they will charge you, I believe three times the amount of taxes. The Minister can charge you three times the amount of taxes if you export raw material or concentrates outside the limits of the province. Similarly in the Province of Quebec there is also regulation which states that the province can charge you twice the amount if you ship these concentrates or raw materials outside the limits of the province.

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But these are what we call "a sleeper"; they are there and are not applied for various good reasons, and the basic reason is economics. If, for instance, you would oblige someone in the Province of Quebec to produce concentrates of copper instead of blister or refinery shapes, he would need a market for this material. At present in the Province of British Columbia there is much talk about further processing the copper concentrates in that province. Various people are asking the government of British Columbia to force many copper producers in that province to establish a copper smelter. Again, it is a question of economics.

In regard to your question on what the federal government does, the only way in which the federal government can act is through the Export and Import Permits Act. This Act could be invoked, for instance, in a case where there is a shortage of supplies for the domestic manufacturer because the prices are higher on the foreign market, and someone would be tempted to sell his metal on the London Metal Exchange market, for example, and not sell his copper—let us take the case

of copper—on the domestic market. Therefore, the small manufacturer or the fabricator cannot have or obtain sufficient supplies.

In this case, the Government of Canada may use the Export and Import Permits Act. Recently, in the House of Commons, the Minister of Industry, Trade and Commerce informed the copper producers during the month of March, 1969, that in case of a shortage of supply on the domestic market, he could take very drastic action.

Also, there are various schemes now, incentives, that are being administered by the Department of Regional Economic Expansion, under the Honourable Jean Marchand, that give you grants for the establishment of a processing plant in Canada. You have read the announcement made by Texas Gulf Sulphur, that the Area Development Agency of the federal government is expected to provide grants up to a total of \$6.5 million.

Mr. Aiken: Thank you, Mr. Drolet, for a very complete answer. I wonder if you could enlarge your answer to include the federal jurisdiction in the Territories, and in offshore areas such as they are?

Mr. Drolet: I beg your pardon?

Mr. Aiken: Could you include in your reply the Northwest Territories and the Yukon, and any other federal jurisdiction?

Mr. Drolet: Offshore?

Mr. Aiken: I do not ask you to go into the offshore problem particularly, but rather into the question of territorial jurisdiction of the federal government.

Mr. Drolet: As we all know, Mr. Chairman, the federal territories—the Yukon and the Northwest Territories—are under the jurisdiction of the Department of Indian Affairs and Northern Development, but since the mineral policy for the whole country is consistent, we also have a great interest in that district. There, the Department of Indian Affairs and Northern Development is studying the economics of each deposit, in order, before the company which operates in this district can obtain permission to ship raw material or concentrates. This is the case, for instance, of the Pine Point deposits that are located in the Northwest Territories. If there is not any sufficient market in Canada or elsewhere for the pure metals, the Department will grant a permit for export.

Mr. Aiken: Then I conclude that as far as the Department of Energy Mines and Resources is concerned, there are no regulations relating to the processing of minerals in Canada.

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Mr. Drolet: No, sir.

Mr. Aiken: That is all I have on that particular subject, Mr. Chairman. I would you now like to discuss water resources.

Mr. Drolet: Excuse me. I may add that the federal tax act also has various incentives. For instance, the three-year exemption that we have for new mines does not only apply to those new mines; it applies also to the production of prime metals, as long as there is a continuity of ownership. We apply that down to the ingot of copper.

Mr. Aiken: But as far as you know, there is no federal legislation from which regulations could be derived which would require a certain percentage of processing within Canada of federal mines.

Mr. Drolet: No, sir. I do not know of any.

Mr. Aiken: Thank you, Mr. Chairman.

The Chairman: We are discussing the subject of water at the present time, Mr. Aiken, if you would like to continue. I must confess to the Committee that we have drifted back to the subject of minerals, the Votes of which have already been taken. Because Mr. Aiken has had health problems lately, I have permitted him to go ahead. Will you continue now with water.

Mr. Aiken: Mr. Chairman, I thank the Committee. I thought we had completed minerals, but we seem to have returned to it. Therefore, I have proceeded with that subject.

I would like to turn for a moment to the Canada Water Cooperation Assistance Act. As Mr. Hymmen has pointed out, I am sure Dr. Prince would not want to anticipate what will be in this act. I wonder if he can tell us whether or not it is intended to deal with the pollution problem in greater depth than does the present legislation.

Dr. Prince: Mr. Chairman, I believe the Minister has set out certain guidelines about what are generalities and what are particu-

lars regarding references to the forthcoming legislation. I should not exceed the boundaries that he has laid down, or perhaps even approach them. Therefore, I must make a very general response to the question that the honourable member has asked.

The new legislation, I hope, will be available to the House before too long. With what degree it will concern pollution is something that I think has yet to be worked out. Whether it will or not, and if so, to what degree, is a question which I can answer no further, sir.

Mr. Aiken: Thank you. May I come back to the question of certain work that was being done in the James Bay area, in cooperation with the Province of Ontario concerning water flows and ask whether or not this project is continuing? Is it expected that there will be a report in the near future on the result of that work?

Dr. Prince: Mr. Chairman, I think the program referred to is a program that we are conducting in co-operation with the Province of Ontario concerning the potential diversion of water from the Hudson Bay-James Bay water shed into the Great Lakes draining system. This investigation is still continuing. My own branch the Inland Waters Branch has a party which will proceed with further studies in the Northwestern Ontario region during the coming summer. I expect this field season will essentially see the end of this investigation. The progress reports with ref-

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erence to the study, I believe, have been given in some of our annual reports. The question of the final report on this investigation will have to wait until the finish of the field program. I think it is our intention to make this available.

Mr. Aiken: Would you expect that this may take another year before we would see an evaluation, or would it be longer?

Dr. Prince: I think the assessment of the engineering findings would perhaps take at least a year.

Mr. Aiken: There has been a lot of discussion concerning a possible pilot project which deals with the Ottawa River as a water conservation and pollution project. Is there anything under way on that project at the present moment?

Dr. Prince: Mr. Chairman, the Ottawa River project, so far as the Government of Canada is concerned, is not under way. We are not involved in any sort of joint study with either Ontario or Quebec in this connection.

Mr. Aiken: It seems to me, and I am merely making a comment by way of introduction, that as the Ottawa River is an interprovincial river there might very well be a good case for federal involvement. Has the federal government not been approached on this subject, or has the government decided not to become involved in it?

Dr. Prince: Mr. Chairman, the federal government, I think, did approach the provinces rather than the reverse in this connection. The federal government offered to pay a substantial share, if not the entire cost, of a comprehensive study of the Ottawa River basin. This offer was made to both of the provinces following the Pollution and Our Environment Conference in Montreal, and while there has been, I believe, an acknowledgement by one of the provinces of this offer, there has been no requests to date to meet with the Government of Canada to discuss a joint approach to the problem.

Mr. Aiken: Can you tell me, Dr. Prince, if there are any pilot projects of that general nature; that is, of a conservation area or water basin area in the pollution control field. By that I am referring to projects which are aimed, more or less specifically, at pollution control?

Dr. Prince: Mr. Chairman, the proposals of the Canadian Council of Resource Ministers Conference concerning demonstration basins which are to be comprehensively studied involved the entire field of water resource management, not just pollution alone. Certainly in many instances, pollution might be the most important aspect of the study.

However, the intention of these demonstration basins is to look at all the possible uses of water, including the competing uses, the conflicting uses, and so on, and to evaluate from a managerial point of view the most beneficial development of a basin. I think none of them are likely to be directed solely at the water pollution problem, but on a much broader base.

Mr. Aiken: I recognize, Dr. Prince, that the whole subject is interwoven. You cannot

separate pollution from other matters. However, I seem to get the impression that there are no such pilot or demonstration projects underway which would involve federal and provincial co-operation in a river basin study.

Dr. Prince: Negotiations with a province, or more than one province in this particular connection, are not entirely dead. In fact, we

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are hopeful that we will be able to negotiate an agreement with the Province of British Columbia fairly soon regarding the study of the Okanagan Lake basin. This matter is under consideration at the present time between officials of the governments of Canada and British Columbia.

Mr. Aiken: Mr. Chairman, thank you very much.

Mr. Lind: Are you allowing any supplementary questions right now, Mr. Chairman?

The Chairman: Is this a report on the hockey game?

Mr. Lind: No, I am not reporting on the hockey game.

The Chairman: That is the only type...

Mr. Lind: I am interested only in pollution.

The Chairman: That is the only type of question which we are allowing at the moment.

Mr. Lind: Pollution; I am interested in pollution.

The Chairman: Mr. Chappell?

Mr. Lind: You are in the first round are you?

The Chairman: We are just about finished it.

Mr. Chappell: I should like to explore the mystery of the various groups that advise the government. I do not mean that unkindly. There is so much about government I must learn but I notice in Vote 40 there are:

the National Advisory Committee on Geographical Research and, the National Committee for Canada of the International Geographical Union and the National

Advisory Committee on Water Resources Research

How many advisory committees are there in this Department?

Dr. Prince: Mr. Chairman, I think the number of such committees is six.

Mr. Chappell: The whole Department of Energy, Mines and Resources.

Dr. Prince: Yes. If I recall, Mr. Chairman, I believe there was the response from the Department on this in which these six advisory committees were listed for the benefit of members of this Committee.

Mr. Hymmen: I take it they are composed of representatives from industry and universities who meet with the senior people of the department?

Dr. Prince: Mr. Chairman, I am not sure whether the membership of these committees is listed on the document produced for the members. I believe, in general, the university community certainly is well represented on all of these advisory committees. In most instances, the private sector is represented, and in some instances the provincial governments are represented as well.

Mr. Chappell: Has there been a growing tendency to increase the number of these committees recently?

Dr. Prince: Would you clarify, Mr. Chairman, the number on these committees or the number of these committees?

Mr. Chappell: No, the use of the committee system.

Dr. Prince: Yes, the use of the committee system is growing quite rapidly. Within the past two years additional committees have been brought into being to advise the government on various aspects of the departmental programs. I refer to the National Advisory Committee on Water Resources Research which was established about two years ago. I believe the committee on mining and metallurgy was established about the same time, roughly two years ago.

Mr. Chappell: Was there consultation with industry or the university world about appointments, or are the appointments simply made by the senior deputy minister?

Dr. Prince: Mr. Chairman, I am not sure whether the appointments to these advisory committees are all handled in precisely the same way. Where a new committee is established, I believe it is customary for the Minister to nominate people to this committee. For subsequent appointments, I believe the chairman of the committee who is usually an assistant deputy minister or the deputy minister himself, has the prerogative of nominating members to that committee.

Mr. Chappell: But is it not customary for the deputy or assistant deputy to be chairman of each?

Dr. Prince: This is correct. Is the director of Mines Branch the chairman, or do you know the chairman?

Mr. Drolet: I will give you an example of one instance. Let us take two committees I know very well—the National Advisory Committee on Research in Geological Sciences and

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another one on mining and metallurgy. Let us take one—Mining and Metallurgical Investigation and Research. The deputy minister with the assistant deputy ministers of the department have drawn up a list of the people we know in industry, in various provincial governments, and also in universities. We are listing the names of people who we think have an interest on such committees. It is not done only to have a name there. Let us say we have 30 or 40 names listed. We discuss it and talk with these people. Finally, we end up with a list of 20 persons. We submit this list to the Minister and ask him if he agrees. He then writes a letter to those people asking if they wish to be a part of that committee. We receive some negative answers because people are too busy on something else, for instance. These are voluntary committees and everyone sits on them without pay. We pay only their expenses when they come to Ottawa.

Mr. Chappell: Why do you do that to your friends?

Mr. Drolet: These people are there because of their individual competence. I would like to stress this point. No one represents a group or an association. He is not a representative of The Mining Association of Canada or the Prospectors and Developers Association. He may belong to these groups, but he serves on

the committee because of his personal qualifications.

Mr. Chappell: Just in a general way, because you know far better than I, but is it the tendency of most departments to do this now—to get advisors like that to the various departments?

Mr. Drolet: In our department it has been the case in recent years. We now have committees on geological sciences, geographical research, rock mechanics, control surveys, mining and metallurgy, and also on astronomy and water. These committees cover almost all the activities of our department because we want more direct communication with the people directly involved in these matters.

Mr. Chappell: I take it you would be kept up to date from the university people as to the leading research on any particular subject.

Mr. Drolet: Yes, sir. In all, we have a big establishment, and a great part of it is called a research establishment. We have been accused by people in universities or industry that they are highly paid hobbies with a little research program somewhere. So this is the answer we have for them because they will work with us in the planning of the programs of our department in the field of scientific research.

Mr. Chappell: This is the last question. Who is in charge of co-ordinating these various committees, if there is overlap, as I expect there could not help but be?

Mr. Drolet: I would say the deputy minister.

Mr. Chappell: Thank you.

Dr. Prince: Mr. Chairman, I wonder if I could add something to this reply. One of the prime responsibilities of these advisory committees throughout the department is to recommend on the award of grants to the university community in aid of research. They do receive submissions from the universities, phase them, and recommend grants in proportion to the value of the submission to the industry or the disciplinary subject involved.

Mr. Chappell: Thank you.

The Chairman: Mr. Harding, then Mr. Lind and starting again with Mr. Whiting. Mr. Harding.

Mr. Harding: Mr. Chairman, I am very, very interested in the comments on the mineral aspects but I will forgo it and get back to...

The Chairman: I am glad you are, Mr. Harding, because I was just beginning to think I will have to hang out a bathing suit or a fish here in order to get everyone into the water.

Mr. Drolet: I have a question on mineral water.

Mr. Harding: Talking of mineral water, I might add that our riding has one of the few soda springs in British Columbia. It is a good place to stop on a little trip.

Mr. Lind: Is it drinkable?

Mr. Harding: Yes. It is drinkable and mixable too. Dr. Prince, I would like to ask a few questions about our Canada Water Conservation Assistance Act. I understand you often have joint programs under this, and some

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programs have been carried out, I understand, in Ontario and British Columbia. Could you give me an example of a program? How does the Canada Water Conservation Assistance Act work as far as, let us say, a municipality or a small community is concerned?

Dr. Prince: Under the Canada Water Conservation Assistance Act, the municipality presumably will approach the provincial government, and work with the provincial government in connection with the proposed program. The provincial government will appraise what the municipality or local organization may be bringing forward as a flood control and conservation program, and if the province feels that this program is justified, it will proceed to Ottawa to our Department and request assistance under the Act.

Mr. Harding: This is apart from assistance which can be obtained under ARDA?

Dr. Prince: As presumably an alternate to such assistance. It is not possible to obtain assistance using two or three acts for the same project.

Mr. Harding: What I am trying to establish is just where is the difference?

Dr. Prince: The intent of the Canada Water Conservation Assistance Act is to provide for a means to avoid flood and flood damage. It is connected with the question of flood control, not with the question of development of marginal lands or agricultural purposes or things of that kind. It is directed primarily at the avoidance of loss of life and property, and the avoidance of claims to the federal government for assistance in the event of damage by promoting the development of flood control works.

Mr. Harding: Irrigation projects would not come under this particular Act, then?

Dr. Prince: No, it would not be covered under this Act.

Mr. Harding: I see. Have you any examples in British Columbia, on any specific example that you could mention?

Dr. Prince: There is the program of flood control in connection with some of the North and West Vancouver streams and these streams have had works constructed on them under the terms of this Act. There is another stream at Port Alberni which is under this Act.

Mr. Harding: I see. If a river were cutting badly into farm land down a valley and affecting a number of farms, could the entire area be brought in under this particular Act?

Dr. Prince: I would say not the entire area. An area where damage to a municipality or a community or an industrial area might be involved would be. If it is possible to show that claims against, or at least requests for assistance to the federal government would be made in the event of damage, or if there would be serious loss of property or life, then these are the things that we would consider as justifying a project of this kind, and if the benefits from such a project seemed to be much greater than the costs that are involved.

Mr. Harding: I see; thank you. I would like to come to an Act which several of the members have been talking about. It is the

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Canada water act and the over-all pollution problem which we have in connection with our water resources. It has always disturbed me. Since I have come to Ottawa, I have never been really able to put my fingers on the actual role that this Department plays

in the stopping of pollution. Water resources, I understand, are handled by the Department. Now, where do you step into the pollution picture?

Dr. Prince: Our Departmental legislation is not really specific in the matter of pollution. It is specific in the question of water resources problems of all descriptions that is covered under our Act. We have had further direction from the government in connection with directions from the Prime Minister's Office regarding our primary and co-ordinating role among government departments that are involved in the field of water and water pollution. It is in this connection, in the co-ordination of activities concerning water in the broad resource area, as well as in the specific pollution area, that our Department has been brought into the picture.

Mr. Harding: What do you mean by specific pollution area?

Dr. Prince: The question of activities that are undertaken by various departments and the co-ordination of these activities relating to pollution; such as under the Fisheries Act, the activities of the Department of Health and Welfare, and the Department of Transport in the Canada Shipping Act. There are many, many agencies of government that are involved in various aspects of the water pollution field through their own legislation, in specific and limited areas, but not in a broadly comprehensive way. We have been asked to co-ordinate these activities of the many departments as well as to take a primary role in the research and survey aspects of the water pollution problem such as we have been conducting in support of the International Joint Commission in the Great Lakes Program over the past two or three years.

Mr. Harding: Now, Dr. Prince, have you been asked to co-ordinate it from now on, or has this been going on for a period of years?

Dr. Prince: This has been going on since the Government Reorganization Bill of 1966; at least, the government reorganization that was announced in late 1965 and effective January 1, 1966.

Mr. Harding: I would like to ask just one or two specific questions. I am still not clear exactly how the Department can prevent pollution. For example, if a pulp mill is to be

built on a river, where does your Department come into the picture? What can you do?

Dr. Prince: Our Department has no means by which it can interfere, or intervene. It can monitor if it so wishes, but it cannot enforce any pollution legislation to prevent that mill from polluting. On the federal side, what we have been asked to do is to co-ordinate other department's programs in the field of pollution. In this particular connection, for example, if the pollution from a pulp mill affected Pacific salmon, the Fisheries Act is able to lead to enforcement action, and the Fisheries Act itself could be brought into play in this particular instance. We do not administer the Fisheries Act, but we do work with the Department of Fisheries in the co-ordination of their programs. We can assist them, they can assist us and so on. This sort of thing would be done under the Fisheries Act, but in co-ordination with us.

Mr. Harding: The point I am trying to get at—and I have had some difficulty reconciling my views to those of the various departments; I guess this comes with time—is whether the water resources are under the control of this department.

Dr. Prince: The water resources so far as federal jurisdiction is concerned, Mr. Chairman, are in a broad way under the jurisdiction of the Department of Energy, Mines and Resources.

Mr. Harding: Yes, well this is navigable streams, in other words.

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Dr. Prince: Any water resource—water for power, water for irrigation, and so on—where federal legislation applies and where federal activity is required, comes under this Department's legislation.

Mr. Harding: While the waters are under the control of the Department, any of a number of sources could pollute the water and you have no power stop it. It could be a pulp mill, or a municipality pouring raw sewage into the river. It could also be a smelter pouring waste material into the water, and your Department has no control to prevent this type of pollution.

Dr. Prince: Specifically, that is correct, sir.

Mr. Harding: Are there other specific regulations under the Fisheries Act, the mines act or some other act that would look after this?

Dr. Prince: That is right. Mr. Chairman, wherever there is federal legislation in the field—it could be in connection with the Department of Transport, the question of pollution from ships, the question of oil spills, the question of things that are deleterious to fish—these other forms of federal legislation could be called into play to enforce regulations. Specifically, our Department does not have legislation which directs its activities toward the abatement of pollution.

Mr. Harding: I see. Now, may I just go a little further? Let us take a hypothetical case. Suppose the effluent from some industrial plant were damaging a salmon stream. You say that this Department co-ordinates the activities between the Fisheries Department and your own Department. Now, what would you do, or what could this Department do in this case?

Dr. Prince: Well, a specific case along the lines that you suggest, sir, might occur in the salmon streams in New Brunswick. Here, for example, we have been working for a number of years with the Fisheries Department, through our own agency, the Water Quality Division and with the mining operations there, to try to arrive at some means of abating deleterious concentrations of base metals which are leading to difficulties with the salmon runs. In this way, the Fisheries Department and ourselves, and the provincial authorities involved in both the mining side and in the water pollution control side, provincially, are working on this problem jointly.

Mr. Harding: I see. It seems to me, however,—and I am not being critical of you or the Department; I just say this generally—that we have pollution problems in Canada simply because there is no clear-cut jurisdiction either between federal departments or between the federal and the provincial authorities. In my opinion, this is one of the areas about which we desperately need some clarification, so we may know in what direction we should move regarding this problem.

Dr. Prince: Mr. Chairman, I would agree with the member on this point.

Mr. Aiken: Agreed.

Mr. Harding: This worries me. May I just return to the co-ordinating aspect of the subject in question?

The Chairman: Mr. Harding, you are over time. Could you conclude with this question?

Mr. Harding: This is the last question, Mr. Chairman. This Department does all the co-ordinating, I understand. Now, how do you come to recognize what are the problems to co-ordinate? Do the other departments come to you, or do the men in your Department go out and spot these problems? How do you know that a problem actually exists with industrial waste getting into the river or sewage getting into it?

Dr. Prince: Well, this may be brought to our attention by provincial authorities, if provincial governments do not have a strong capability in this field. In some instances, it is a problem that governments refer to the International Joint Commission, in connection

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with engineering boards our Department will be made aware of pollution problems. The reference on the Great Lakes pollution problem is one, in point, where our Department certainly has had a leading and co-ordinating role, in conjunction with the investigation from the Canadian team side. We have established ships and a base on the Great Lakes for this particular operation, and have made it possible for other departments, particularly Fisheries, and National Health and Welfare, to conduct studies of the lakes. Also, our own officials, our own experts, have been involved in the physical, chemical, and geological related studies of the pollution problem in this particular instance. We are establishing networks, concerning water quality, throughout the country in order to get an assessment of the background, the natural level of pollutants in water, and to extend this network into areas where pollution is serious. We are doing this so that we may have a continuing input and monitoring of the nation's waters to assess what the problems may be with them. This is the way in which we are working at the present time.

Mr. Harding: Thank you, Mr. Chairman, and Dr. Prince.

The Chairman: Mr. Lind.

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Mr. Lind: Thank you, Mr. Chairman. Doctor, would you relate to us what our contribution is, along with the Province of Ontario, in the study on the pollution problem of the Great Lakes, namely Lake Erie? What do we contribute to this? Are we contributing 10 per cent, 25 per cent or 50 per cent?

Dr. Prince: Mr. Chairman, do you mean in relation to the cost of the study?

Mr. Lind: Yes.

Dr. Prince: Well, I do not know of anyone who has made a breakdown, really systematically or accurately, of the relative input costs between departments or between the federal government and the provincial government in this case. With regard to the International Joint Commission reference on the subject, and with regard to the province of Ontario, I believe the federal government, through the IJC, compensates the Province of Ontario for expenditures, in terms of manpower and operational costs, for its contribution in support of the International Joint Commission.

The costs of departmental inputs to the study of Lake Erie by our own Department, where we provide ships and aircraft and vehicles of all descriptions, as well as our own manpower, is borne as part of our normal estimates. The same is true of the Fisheries Research Board and the Department of National Health and Welfare, so that a very substantial percentage of the total cost of this investigation is borne by the federal government. I would say, also, that the provincial government contributes very nominally in out-of-pocket expenses for this.

Mr. Lind: Mr. A. D. P. Heeney told us a few years ago, in international external affairs, that the federal government contributed 50 per cent of the cost. Would that be a fair figure between Ontario and the federal government in their study, especially of the problem of Lake Erie?

Dr. Prince: Mr. Chairman, the 50 per cent of the cost I would think, in this particular instance, would be relative to the United States' cost. We tend to share equally with the United States, the cost of these studies, not rigorously but as closely as we can. I do not think, that this is an accurate statement, regarding the federal relative to provincial costs.

Mr. Lind: Well, then, ignoring the costs is it your opinion that the pollution condition in Lake Erie is causing that area to become the Dead Sea, quickly. Is the situation improving,

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remaining stable, or what is the case with this pollution problem in the Lake Erie district?

Dr. Prince: Mr. Chairman, it is rather difficult to assess at what stage the problem is at the present time. I think the situation is probably becoming somewhat worse. If plans that are in the wings to be implemented with regard to abatement can be implemented fairly rapidly, we will start to gain ground on the problem. The pollution additions to Lake Erie raise questions of the United States' input to it: the very small communities along the north shore of Lake Erie and the substantial but relatively small pollution input from the City of Windsor and other municipalities on the Detroit River, on the Canadian side; is relatively minor compared to Detroit and the large cities on the south shore. I think the question of arresting the deterioration of the lake is largely a question of the speed with which abatement programs can be implemented in the United States. Certainly a number of the states there have first-rate plans up to tertiary treatment; how rapidly these are going to be implemented, I suppose, depends upon circumstances in the United States.

Mr. Lind: Well, this pollution abatement problem is a very serious one to those of us who live in southwestern Ontario. Granted the majority of the big industrial and large population centres are probably on the south side of Lake Erie, but what are we doing in Ontario concerning pollution abatement? How many municipalities have we today with populations of 10,000 or over who have not provided for and passed the primary or tertiary stage of sewage abatement for pollution?

Dr. Prince: Well, Mr. Chairman, the details of this particular program of abatement in Ontario, I think, primarily rests with the Ontario Water Resources Commission. We do have reports from them. I am not in a position off-hand—nor does it really relate to our estimates—to say how many municipalities in Ontario have primary or secondary treatment. I would say in general, however, that Ontario, of all the provinces, and certainly among many of the United States, has an

exceedingly good program. I think its abatement programs are as well advanced as any comparable part of North America.

It has not gone in for tertiary treatment for nutrient removal. This does put a new dimension on the whole question of the cost of pollution abatement, but it has, essentially, schedules for secondary treatment of all municipalities on small inland streams. However, Ontario eases off, to some extent, in the question of secondary treatment for municipal outfalls into large waters, such as connecting channels and the Great Lakes themselves. Here, primary treatment, I believe, is the requirement that is asked of municipalities on the larger waters.

Mr. Lind: Well, then, would you go so far as to say that Windsor, which is a rather large metropolitan area as far as we are concerned, has only received primary treatment?

Dr. Prince: I believe, Mr. Chairman, the new plant in Windsor is a primary treatment plant only. It does not go to secondary treatment at the present time.

Mr. Lind: Under your department you administer the Conservation Act, do you not?

Dr. Prince: The Canada Water Conservation Assistance Act, yes.

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Mr. Lind: What programs have you at the present time throughout Canada to increase the flow, or sustain the summer flow, during the, shall we say, 100 days of dry period during the months of July, August and September?

Dr. Prince: Mr. Chairman, I do not think the Canada Water Conservation Assistance Act would be directed primarily at increasing summer flows. The intention of the Act is to increase the protection against spring flood run-off, but in so doing, I think the summer flows would be improved by the effective reservoirs. That would be incidental to the main intent of the Act.

Mr. Lind: In conservation areas where one must protect against the spring run-off, the Department of Energy, Mines and Resources are not interested in a grain-down to the permanent lakes that are behind these inland dams.

Dr. Prince: Once a dam is designed and built, the responsibility for its operations rests primarily with the province or its conservation authority. The question of grain-down is a matter of operational technique. If the requirement of the authority is that the reservoir to be kept up, then I presume it will be so maintained. If the requirement of the conservation authority is to equalize low flows and to release from the reservoir, it would be within their prerogative to do so. It is a question of what they need in terms of their conservation area. We have no control over this once the project is completed.

Mr. Lind: Dr. Prince, you have no control, as you say, of the recreational facilities that the municipalities would probably want to provide around these water storage areas?

Dr. Prince: That is correct. It is not the intention of the Act to provide for these recreational facilities. We certainly hope that they are provided, but it is not within our jurisdiction or terms of reference under the Act to provide these.

Mr. Lind: I realize that the federal government does not make any contribution to these recreational facilities, but if they are there, the Department of Energy, Mines and Resources would not object to them?

Dr. Prince: In so far as it is possible, Mr. Chairman, I would say that we encourage them. Certainly, the reservoir itself—the body of water, the 100 or 200 acres of artificial lake that is created—can be used as a recreation resource. We certainly do not inhibit, or prohibit, in any way, the use of the reservoir for this purpose.

Mr. Lind: Do you object if the downstream municipalities use these as a source of fresh water supply to their purification plants? I am speaking mainly of Ontario now.

Dr. Prince: Mr. Chairman, if such a use were part of the design and part of the disclosure of the project, and that it was compatible with the question of conservation and flood control, we would have no objection to that utilization.

Mr. Lind: You have no objection, then, to using these flood control dams and lakes to maintain a downstream flow during the 100 days of the dry season in order to facilitate sewage abatement and increase the efficiency

of the sewage disposal systems of cities or towns downstream from the dam?

Dr. Prince: I think, Mr. Chairman, that is primarily a question of the management of the reservoir. The utilization of the augmented flow from a reservoir is a good thing in terms of conservation. What we would not like to see is a reservoir maintained at full height when the flood season approaches, so that it could not be utilized for flood control.

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We would like to see a fair amount of free board in the reservoir available to hold back any potential flooding that may occur. This is the prime purpose of it.

Mr. Lind: How much co-ordination do you have between the Ontario Water Resources Commission and yourself concerning the spring run-off and these flood control projects?

Dr. Prince: Mr. Chairman, the co-ordination that we have with the Ontario authorities in this connection is not primarily through the Canada Water Conservation Assistance Act. It is really through our Water Group of Canada, a former hydrometric survey which has joint responsibilities with the province for the establishment of a hydrometric network throughout Ontario and throughout Canada, with the exception of Quebec. The prediction of the levels of run-off are tied in with this network, which we operate as a federal entity, but with a joint cost-sharing arrangement with the provinces.

Mr. Lind: I have one more question, Mr. Chairman. During the last Parliament we often heard about lowering the level of Lake Erie in order to flush out the sewage of the city of Montreal. Have you any comment on that?

Dr. Prince: I am sorry, Mr. Chairman; is the question the lowering of Lake Erie?

Mr. Lind: Oh, I am sorry: Lake Ontario, in order to flush out the Port of Montreal or the City of Montreal.

Dr. Prince: The question of control of the releases and the level of Lake Ontario is under the jurisdiction of a joint board of control, U.S. and Canada, under arrangements through the International Joint Commission. The question of scheduled releases for

transportation purposes of the canal and for power generation in the hydro power sites on the St. Lawrence, is a very carefully forecast, scheduled and operated procedure. The question of releases specifically for the purpose of flushing out the Montreal Harbour I think would be entirely incidental.

Mr. Lind: This is entirely under the joint commission and it has nothing to do with the federal government.

Dr. Prince: Yes, I think it has something to do with the federal government because the International Joint Commission is an agency of the federal government. It is a joint agency of the two federal governments, and boards of control set up under the International Joint Commission are composed of federal people and private sector people who are specialists in the field. They have certain terms of reference, and are required to administer a control procedure.

Mr. Lind: Thank you Dr. Prince, and thank you, Mr. Chairman.

The Chairman: Mr. Whiting.

Mr. Whiting: I will pass, Mr. Chairman.

The Chairman: Mr. Gilbert.

Mr. Gilbert: Thank you, Mr. Chairman. Mr. Whiting has been most co-operative and I will try to be the same in my questioning.

Dr. Prince, your Department has made studies with regard to different projects, one of which is the Saint John River. Do you know if that study has been completed?

Dr. Prince: Are you referring to a specific item, Mr. Chairman?

Mr. Gilbert: No, I am referring to a speech that was made a short while ago where there was a reference that within the Atlantic Region the study of the Saint John River was under way. Has that study been completed? It says that the tidal power of the Bay of Fundy is being assessed. Probably Mr. MacNabb could answer that.

Mr. G. M. MacNabb (Assistant Deputy Minister, Energy Development, Department of Energy, Mines and Resources): I have problems, Mr. Chairman, as to the context in which the statement was made. There have been a number of studies of the Saint John River. There was an International Joint Com-

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mission study some years back of the Saint John River. More recently there have been international discussions concerning the development of the Dickey Dam in the head waters of the Saint John in Maine, and even more recently, I believe they thought of a federal provincial study on the total basin of the Saint John but that latter one is not under way.

Mr. Gilbert: It is not under way yet. There is another reference with regard to the water supply for the Saskatchewan-Nelson River Basin which was to be completed in 1970. Is that still under study?

Dr. Prince: That particular study, Mr. Chairman, is under way at the present time. The Saskatchewan-Nelson Board has been established and there is a study director appointed with a staff. The investigation of the Basin is under way at the present time.

Mr. Gilbert: When will the study on the Bay of Fundy tidal power be completed?

Mr. MacNabb: The report, Mr. Chairman, is to be completed by June 30 of this year.

Mr. Gilbert: Will that be available to members of the Committee, Mr. MacNabb?

Mr. MacNabb: Mr. Chairman, when it is completed, it will be submitted to the three participating governments, Nova Scotia, New Brunswick and the federal government.

Mr. Gilbert: Has there been any further development on the Parsons' project of which you are probably very familiar?

Dr. Prince: Mr. Chairman, the Parsons' project is really something that is not an official proposal by any government. I think it is primarily an engineering speculative proposal on the part of some very large engineering firms in the western part of the United States. We have, of course, in connection with our engineering studies in the branch, the Inland Waters Branch, have been interested in what is being said. This sort of thing is being studied and a surveillance program of these proposals is being undertaken on a continuing basis but we have no official input to this sort of thing.

Mr. Gilbert: In other words, there has not been any official negotiations between U.S.

officials and Canadian officials with regard to the projected cost and the projected development of this program?

Dr. Prince: Mr. Chairman, there is no basis for an official study to be undertaken by the two governments at this point. This is a proposal that has been discussed by private engineering entities in the United States that has received a great deal of publicity, but there is no official action to study this matter at the present time.

Mr. Gilbert: When you say there is no official action, do you mean on behalf of the Canadian government?

Dr. Prince: We have not been approached by the United States Government to join them in a study of this kind.

Mr. Gilbert: Was that study at the request of the federal government of the U.S.?

Dr. Prince: Not to my knowledge, Mr. Chairman. The study was promoted by the engineering firm itself, and has promoted considerable interest on the part of some of the people from the dry western states, but I do not believe that the U.S. federal government has been involved in this.

Mr. Gilbert: One short final question, Dr. Prince. Have there been any studies in desalination conducted by the Department?

Dr. Prince: There has been a review of the literature, Mr. Chairman, and a report of the Department has been issued in this connection. There has been no actual experimental work done by the Department. We have been monitoring developments in the field. We do not consider that this particular matter is one of high priority in Canada at the present time, and there is no program devoted to this.

Mr. Gilbert: Those are all the questions I have, Mr. Chairman.

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The Chairman: Shall Vote 40 carry?

Mr. Lind: Mr. Chairman, I have one question, please.

The Chairman: Mr. Lind.

Mr. Lind: I would like to ask Dr. Prince a question. We have often heard that Ottawa is the number two pollution centre of Ontario. Have we sufficient sewage disposal plants in Ottawa to take care of our pollution problem,

or are we running sewage directly into the river?

Dr. Prince: Mr. Chairman, this is primarily a provincial matter. I do not think it is related to our estimates. I think Ottawa has developed a first-rate modern primary treatment plant and I think that it is operating quite well. The question of whether any specific outfalls are going directly into the Ottawa River at the moment, I am not in the position to say. I am not familiar with the system locally.

Mr. Lind: What about the older parts of the City of Ottawa?

Dr. Prince: Mr. Chairman, I am not familiar with the details of the local scene in this respect.

Mr. Lind: Well now, let us cross the river for a minute. What about this happening to E. B. Eddy Co. in Hull? Are they treating their sewage disposal from the pulp sulphide plant over there. What are they doing?

Dr. Prince: Again, Mr. Chairman, we have had no program of surveillance from the federal government concerning the industrial outfalls on the Ottawa River. I rather suspect that there are a fair number of direct outfalls from the processing operations over there.

Mr. Lind: Mr. Chairman, what is specifically our jurisdiction? Have we no jurisdiction over these at all, or are we just in a supervisory manner over the provincial governments?

Dr. Prince: I would say, Mr. Chairman, that the direct supervision over these matters by the federal government is minimal at the moment. If one wishes to invoke the Fisheries Act regarding the Ottawa River, I suppose it could be done. But, in the inland waters of the country, the responsibility for the administration of the Fisheries Act has in essence been turned over to the provinces for administration. The Fisheries Act is operable primarily in the salmon fisheries of the West Coast and the marine and inland fisheries of the Atlantic Provinces. But it is not operational, except by remote control, throughout the rest of the inland waters of the country.

Mr. Lind: Mainly then, through you Mr. Chairman to Dr. Prince, we have been a department of co-ordination and encouragement to the various provincial organizations to enforce pollution abatement as much as possible. Is that right?

Dr. Prince: This is in part correct, Mr. Chairman, but we also have been active in the research field from the physical, chemical, and water quality point of view. We do have programs in this field which are quite active and which are contributing materially to the question of the understanding of the pollution problem. In this connection, too, I should say that we have established the Canada Centre for Inland Waters at Burlington which is conducting research, study and monitoring operations throughout the Great Lakes, particularly the two lower lakes. Quite apart from the co-ordination role, which is referred to, we do have active research and investigation programs going as well, conducted by the Department of Energy, Mines and Resources.

Mr. Lind: Well then, through you, Mr. Chairman, we are entering these fields and endeavoring to assist the provinces in any way possible in pollution abatement.

Dr. Prince: That is correct, sir.

Mr. Lind: Thank you very much.

Mr. Gilbert: Is it the intention of the Committee to make the information supplied by Mr. Drolet an appendix to the Proceedings, or is his report to be circulated—Study No. 8?

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Mr. Drolet: I have a copy here of the study that was presented to the Royal Commission on Taxation. It is only an excerpt from the copy, answering the questions you asked the other day.

The Chairman: Is it the wish of the Committee to add this as an appendix to this meeting.

Some hon. Members: Agreed.

Mr. Drolet: These are not my calculations. I have no responsibility for those.

Mr. Chappell: Mr. Chairman, there are just three points I would like to enquire about. Is there any research being conducted in law as to whether or not you might have some jurisdiction on water pollution? Now the reason I ask is that some people now think that Transport may possibly have jurisdiction under navigation to clean up air pollution. I am wondering if any person has given a second look at the legal aspects to see if he might find some jurisdiction for the waters. I appreciate that it is generally accepted that

the federal authority would not have jurisdiction, but I suggest that you might consider taking another look at it to see if this is the case.

The next question is, who is it that flies airplanes over Lake Ontario looking for pollution?

Dr. Prince: Well, Mr. Chairman, we fly one. There may be others. But, as part of our Great Lakes program, we have equipment called "infrared scanning equipment" which monitors very small differences in temperature between various bodies of water.

Mr. Chappell: I would like to give an example. I was sailing there last year and a ship went the whole length of Lake Ontario leaving a pollution stream that we were afraid to take our boats through. It was very bad and yet nothing happened. So, I want to complain that whoever is looking and enforcing, is not too insidious on occasions in any event.

Dr. Prince: In this connection, Mr. Chairman, the question—could we clarify this? Was this an oil slick?

Mr. Chappell: Yes, a ship just losing oil.

Dr. Prince: Well, the question of surveillance of shipping for oil releases or pollution releases from vessels, garbage or sanitary waste is jointly surveilled by the Department of Transport and by the Ontario Water Resources Commission.

Mr. Chappell: I am just telling you that in Lake Ontario they are not doing a very good job. There is a great deal of evidence of ships leaving a stream of pollution and nobody catching them.

My last point was this International Joint Commission on pollution in the lakes. We have been talking about this since the last century, have we not?

An hon. Member: Probably.

Mr. Chappell: Who is our chief expeditor to try and produce something from this joint group actually to get somewhere and do something?

Dr. Prince: The question pertains to the International Joint Commission's studies?

Mr. Chappell: Yes; as I understand it from what I have read, we talk about it but nothing really happens that is very effective.

Dr. Prince: Mr. Chairman, one of the difficulties with the studies conducted by the International Joint Commission does not relate to the validity and thoroughness of their studies. It relates merely to the fact that, in general, they can merely make their results known. They can recommend to governments that certain things be corrected, but directly the International Joint Commission has no power of enforcement.

Mr. Chappell: I accept that, so our expedition to try to get the Americans to move if it is them, would be your Minister?

Dr. Prince: Or the Minister of External Affairs.

Mr. Chappell: Right. Thank you. Mr. Chairman, on this matter of order, are we going to try to clean up this item of water tonight?

The Chairman: If the Committee is agreeable, I would like to pass these three votes, but there will be another discussion on water under Vote 1. If we get a chance to visit the Inland Water Centre at Burlington, we might want to leave Item I open for a discussion on it after that, provided we can get transportation down there.

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Mr. Aiken: Before these items are passed, there is one comment I would like to make, if I might.

An hon. Member: We never object.

Mr. Aiken: We have been looking, I think, for a strong lead from the federal government under the new Water Act in the question of water pollution control. This is something that has been rather held out over the last two or three years. This water act would indicate the government's real intention to deal with water pollution generally. With no criticism whatever of Dr. Prince or the departmental officials, I have not heard anything tonight that gives me the impression that the government is about to take this strong lead or that the water act is going to fulfil the hopes we expected. With that, I will rest the case. I certainly hope and I expressed this to Dr. Prince, because apparently, the Canada Water Conservation Assistance Act is not yet completed—that this act will include some very strong pollution control measures that go to the very limit of the federal gov-

ernment's authority, while permitting some co-operation with the provinces so that we can get at this problem.

Mr. Lind: Mr. Chairman, is this not a provincial matter? Is the authority not under the provincial governments for pollution abatement? Must they not act on this rather than the federal government?

The Chairman: This has been the trend of the discussion all evening. I will throw it back to Dr. Prince for a final answer. It seems to me that Dr. Prince has answered this question about six times, in six different ways, but I will let him have another go at it.

Dr. Prince: Well, Mr. Chairman, I think the questions that are being asked at the moment are germane to the subject in every way. Basically, I think it is a matter of divided jurisdiction. There are many parts and pieces of federal legislation; there is jurisdictional division but there exists still a very substantial element of federal jurisdiction that can be called upon from the various acts, perhaps from forthcoming legislation that may tend to clarify this situation.

I would not agree that it is entirely a provincial matter; there are many aspects of it on international waters, with a fair degree—in fact, a very strong degree—of federal legislative responsibility in the international waters. It is not as clear in the question of interprovincial waters, but again, I think there is a federal involvement here which is significant. While the primary, local, and perhaps regional problems lying within provinces are clearly within the provincial jurisdictional field, in some instances in the country they do need assistance.

We are endeavouring to provide technical, scientific, and engineering assistance. The question of direct action by the federal government, perhaps, can be brought to bear on the problem to a greater extent than has been the case in the past. There is ample federal legislation, ample federal jurisdictional right for participation, I think, in an increasing way in this field. However, basically we have to look on the over-all problem as one of divided jurisdiction, and one that does require co-operation between the two levels of government.

The Chairman: Shall Votes 40, 45 and 50 pass?

Votes 40, 45 and 50 agreed to.

The Chairman: That completes the discussion of this particular section. We still have Vote 1 to cover at a later date.

At this time, I would like to thank our witnesses for being with us for the last two or

three meetings, and also to express our appreciation for the excellent answers that have been given.

Thank you, gentlemen. The meeting is adjourned.

APPENDIX "G"
STUDIES
of the
ROYAL COMMISSION ON TAXATION
Number 8
The Taxation of Mineral Extraction
by
M. W. Bucovetsky, M.A.
University of Toronto
Toronto

July 1964

**THE REVENUE COST OF PRESENT
TAX CONCESSIONS**

The immediate effect of the present special provisions for the taxing of the extractive industries is to reduce the effective tax rate on firms in the industry below what it would be in their absence. We have made the following estimates of taxes forgone which, in the absence of these provisions, would have been paid:

Three-year exemption: revenue forgone, 1962 taxation year, \$58 million.

Percentage depletion to corporations—operators and non-operators allowance (not including "cost" depletion to industrial minerals in bedded deposits): revenue forgone, 1961 taxation year, \$53.5 million.

Shareholder's dividend depletion: revenue forgone, 1961 taxation year, \$1.5 million, approximately.

Prospectors' and grubstakers' exemption: revenue forgone is difficult to estimate because the tax saving depends on the tax bracket of each individual. A very rough estimate of the recent annual average payment to prospectors and grubstakers (not their tax savings) is that it is of the order of \$1 million a year.

Rapid write-offs of exploration and development expense: again it is not possible to make a precise estimate of revenue forgone. The advantage of this provision is that to the extent that current income is understated, the government has made a "loan" to the industry. The advantage to the industry in any year would be measured by the interest factor on the amount of the "loan" outstanding. The net benefit of the expensing privilege to the industry at any given time depends on the cumulative excess of expenses

deferred to date, the period of deferment, and the relevant rate of interest.

However, it may be observed that if the industry is one with a constantly growing rate of capital investment, then expensing rather than amortizing capital costs results in indefinitely understanding current income. The amount of tax deferred grows indefinitely. Such, indeed, is the case with exploration and development write-offs in the extractive industries.

It is this increase in the annual "loan" made by the government to the industry, through the expensing privilege, for which we have made an estimate. On the assumption that the average expenditure that is subject to immediate write-off is economically attributable to ten years of future output, the annual amount of taxes indefinitely forgone each year is \$39.0 million.

In sum, a rough estimate of the annual revenue cost of the special provisions for taxing the extractive industries would be of the order of \$152 million in recent years.

**DISTINGUISHING CHARACTERISTICS
OF MINERAL EXTRACTION**

The process of discovery of minerals and their conversion to utilizable industrial raw materials or fuels is, in a general way, analogous to the supply of any other form of capital good. Mineral products are factors of production used in the output of socially desired final goods. As in the case of any capital good the economic system has two allocative functions: the rate of use of the existing stock, and the provision for investment in renewing the known stock. The possibility of eventually exhausting the stock of mineral resources does not, of itself, alter their role as capital goods. As any capital good is used in produc-

tion its remaining useful life is diminished. Production creates value, but in the process uses up some portion of the capital employed. Whether or not capital is renewed or enlarged by further investment depends on the relationship between the cost of the capital and its anticipated yield.

The twofold operation of the price system is that, in the first instance, if existing supplies of a capital good are not adequate to the

demand for its output at prevailing prices, scarcities will lead to price rises of its products. The price rise will induce more intensive exploitation of existing supplies of the capital good, encourage the substitution of other factors of production and other end-products and technological innovations to make known supplies more productive, and will act as an incentive to increased investment in new sources of supply.

THE QUEEN'S PRINTER, OTTAWA, 1969

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament
1968-69

STANDING COMMITTEE

ON

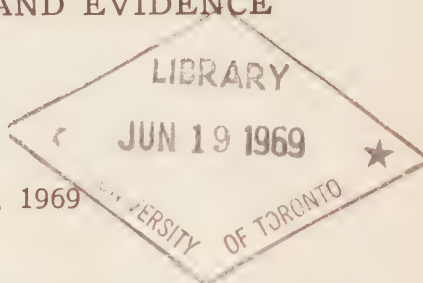
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 22

THURSDAY, MAY 8, 1969



Revised Main Estimates (1969-70) of the Department of Energy, Mines
and Resources relating to the National Energy Board.

APPEARING:

The Honourable Otto E. Lang, Minister without Portfolio

WITNESSES:

(See Minutes of Proceedings)

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and Messrs.

Aiken,
Beaudoin,
Chappell,
Code,
Comeau,
Deakon,
Gilbert,

Harding,
Lind,
Mahoney,
Moores (*Bonavista-
Trinity-Conception*),
Orange,

Paproski,
Ritchie,
Roy (*Timmins*),
Serré,
Sulatycky,
Whiting—20.

R. V. Virr,
Clerk of the Committee.

MINUTES OF PROCEEDINGS

THURSDAY, May 8, 1969.
(22)

The Standing Committee on National Resources and Public Works met this day at 9.45 a.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Aiken, Anderson, Code, Deakon, Harding, Hopkins, Hymmen, Marchand (*Kamloops-Cariboo*), Morison, Orange (10).

Also present: Mr. Borrie, M.P. and Mr. Yewchuk, M.P.

Appearing: The Honourable Otto E. Lang, Minister without Portfolio.

Witnesses: From the National Energy Board: Mr. R. D. Howland, Chairman; Mr. H. Lee Briggs, member; Mr. W. A. Scotland, Chief Engineer.

The Chairman introduced the Minister who, in turn, introduced the Chairman and members of the National Energy Board.

The Minister made an opening statement and then explained to the Committee that he had to leave for another engagement.

Dr. Howland introduced the officials of his Department and then made a statement regarding future market forecasts for Canadian gas and oil.

Dr. Howland, assisted by Mr. Briggs and Mr. Scotland, responded to questions.

At 12.01 p.m., the Committee adjourned to the call of the Chair.

R. V. Virr,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Thursday, May 8, 1969.

• 0949

The Chairman: Gentlemen, although we do not have a quorum, all parties have agreed to go ahead without one. At the next meeting we will have to pass the motion that the Minister's statement be printed. I want to thank the members of the Committee for their co-operation.

• 0950

We have with us this morning the Honourable Otto Lang, Acting Minister of Energy, Mines and Resources. Possibly, you could introduce your officials to the Committee or could we ask one of your officials to do this on your behalf? At this time, I would like to welcome all the officials and the Minister to our meeting.

Hon. Otto Lang (Acting Minister of Energy, Mines and Resources): Thank you very much, Mr. Chairman. I appreciate the indulgence of the Committee in allowing me to begin. I regret to say that I must leave this morning. However, I will be leaving you in extremely good hands because a member of your Committee, the Parliamentary Secretary to Energy, Mines and Resources, Mr. Bud Orange, is here. Also, I have with me members of the National Energy Board, and they will certainly be able to deal with your enquiries and interests in the area before us this morning.

To my right is Dr. R. D. Howland, who is the Chairman on the National Energy Board, and who has been with the Board since its beginning in 1959. Previously, he served on a number of Royal Commissions, including the Borden Commission which was so important to the existence of the National Energy Board. Dr. Howland is a westerner from Brandon College, and an Economist from London School of Economics. He became Chairman of the Board in March, 1968 when he succeeded Ian McKinnon, the first Chairman. Also here, beside Dr. Howland is Mr. D. M. Fraser, the Vice-Chairman of the Board who has also been a member since its inception in 1959. He is another westerner, a graduate from the University of Manitoba with postgraduate work in political science

from the University of Toronto. Before joining the Board, Mr. Fraser as well as Dr. Howland, has a career in public service, including some in Nova Scotia. Mr. H. Lee Briggs, is an electrical engineer who graduated from the University of Manitoba, and who also joined the Board in 1959 after service as General Manager of Winnipeg Hydro-Electric System, and later as General Manager of the British Columbia Power Commission. A fourth member of the Board, Mr. Maurice Royer, is out of town on business today. He is a civil engineer, and a former Professor of Civil Engineering at Laval University. Mr. Jack Stabback, the newest member of the Board—appointed in July of last year—is here. He is a graduate of the University of Alberta, a chemical engineer, and a former member of the Oil and Gas Conservation Board of the Province of Alberta. He joined the Board's staff five years ago as Chief Engineer and then, as I have previously mentioned, came on to the Board in July of last year. When I have completed, perhaps I will ask Dr. Howland to introduce the other members of the Board's staff who are here with us today.

This morning we are dealing with the estimates of the Board, which are found on pages 50 and 51 of the Department's white book of the estimates, that is to say in the new format.

The work of the Board has been defined as falling within a single program, for purposes of parliamentary appropriation. Since the regulatory and advisory functions are so inter-related, the subdivision of parliamentary appropriations into two or more programs has been rejected as impractical.

I wish to refer, in a general way, to the objectives of the Board's program. The objective in establishing the Board was to assure the best use of energy resources in Canada. To this end, the Board is required to regulate, in the public interest: the construction and operation of oil and gas pipe lines subject to the jurisdiction of parliament, the toll or transportation segment of the price charged

by a gas pipe line company, or the toll charged by an oil pipe line company which is subject to its jurisdiction, the export and import of gas, the export of electric power, and the construction of those lines over which such power is exported.

In addition, the Board is required to study and keep under review, all matters relating to energy and sources of energy within the jurisdiction of parliament, and to recommend to the Minister such measures as the Board may consider necessary or advisable in the public interest, with regard to such matters.

• 0955

By its very nature, through both its regulatory and advisory activities, the Board contributes to the stimulation and growth, and not merely the support of economic activity. The impact of certain decisions of the Board flow through to the regulated industries and their customers, thus materially affecting the financial and natural resources of the country. This flow-through effect is multiple, in that the results of the Board's decisions and advice permeate to the consumer level, back to the producing industry and out to the suppliers of equipment, materials and services. I am sure the Committee will appreciate—from what I have been saying—the vital importance of the Board's work.

The Board's estimates for this fiscal year amount to \$1,825,000 of which \$1,542,000 is for salaries and wages and the remaining \$283,000 is for the day-to-day operation of the Board. The Board, for 1969-70, has an authorized establishment of 156 which is an increase of ten over the previous years' establishment.

The last time the Board was before you, I believe that the Members found it useful to have copies of the Board's Annual Report. I believe that you have received copies of the Board's latest Report for the year ending 1968. If you wish further copies, they are available here today. From the Report you will have been able to obtain a general picture of some of the significant aspects of the Board's work during the past year. You will also note from the Report, the Board's awareness of the potential impact of the Prudhoe Bay discovery on the North American supply-demand pattern, as well as the Board's continuing study on the structure and growth of gas reserves.

I know that oil is upper-most in your minds, but before discussing that matter, I

want to talk to you about the work of the Board in the electrical and gas fields, as well as briefly touch on the Board's study on its' Long Term Energy Forecast.

On the regulatory side, in connection with electrical power, there are three major applications involving the export of considerable quantities of power, which are expected to come before the Board in 1969. The British Columbia Hydro and Power Authority has made application for three licences involving the sale of power to two utilities, one in the State of Washington and one in California. It has also made application for a licence permitting interconnection with and the sale of surplus firm or interruptible power to the power utilities in the Northwest Power Pool and its connections, meaning the entire western portion of the Continental United States. The Manitoba Hydro Electric Board is expected to apply for a Certificate of Public Convenience and Necessity to establish a high voltage interconnection with the other utilities south of the international boundary, in the Mid-Continent Area Power Pool. It is also expected that application will be made for an export licence, which will permit continuous interconnection of the Manitoba system to that Pool, and the sale of surplus interruptible power to its' utilities. The New Brunswick Electric Power Commission is preparing an application for a certificate for the construction of a 345,000 volt intertie with several U.S. power utilities along the Northeastern seaboard, and for a licence to interconnect with those utilities and to sell surplus firm or interruptible power to them.

In its advisory capacity, the Board's engineers are carrying out power system planning studies in connection with power supply problems in Newfoundland, the other Atlantic Provinces and, in particular, studies relating to the current Atlantic Tidal Power investigation. These are being done in conjunction with the Department of Energy, Mines and Resources and the Department of Regional and Economic Expansion. Some co-ordination studies, and data exchanges are also under way with the U.S. Federal Power Commission. It is expected that these same engineers will take part in the joint Canada-U.S. energy studies, which are of concern to both countries. It is anticipated that activity associated with these studies will increase during the coming months.

I believe that it would also be useful for you to know something of the contributions which the Board's small but highly competent staff of electric power system engineers are making towards the solution of problems involving developments in several parts of Canada.

From the points of view of engineering and economic feasibility, during the past year, this group has contributed their collective talents to the question of the over-all feasibility of supplying the Island of Newfoundland from the hydro power sites in Labrador. It has

• 1000

made a significant contribution to the production of the Electric Power System Economic Studies in connection with the forthcoming report on the Atlantic Tidal Power studies. It has also engaged extensively in the inter-provinces problems between the Maritime Power Pool utilities, and the northeastern United States utilities, and in the engineering and economic discussions which continue to appear on the Nelson River project in Manitoba, and the many matters which arise continually regarding the security of power supply and the possibility of obtaining for Canada the benefits of further electrical inter-connection with the large power-system groups within the United States.

While developments in the natural gas industry have been overshadowed by those in the oil industry in recent months, the natural gas industry has, in fact, been developing in quite a remarkable way. Net additions to reserves in 1968 were some 4 trillion cubic feet, as compared with a long-term average of 2.5 trillion cubic feet a year. Coming before the Board during the forthcoming year, according to indications from industry, are export applications from Westcoast Transmission Company Limited, Alberta and Southern Gas Company, Trans-Canada Pipe Lines Limited, and now a new entrant into the Canadian gas transportation and exportation scene, Northern Natural Gas Company operating through a Special Act company which it has recently purchased; that is, Consolidated Pipe Line Company Limited. Associated with these exports would be considerable investment in new facilities. Aside from exports, Trans-Canada has now before the Board an application for very large new installations

in 1969, upon which the Board has not yet decided.

Exports already authorized are now running at a rate of about \$160 million per year, which will increase with certain increases in the export contracts already approved. In 1968, exports accounted for more than 40 per cent of our production of marketable gas.

The prospects of the natural gas industry appear bright. In addition to a continuing strong demand in Canada, it appears that significant United States markets are rapidly developing.

Earlier in my introduction, I made reference to the fact that the Board is required to regulate, in the public interest, the toll or transportation segment of the price charged by a gas pipe line company or the tolls charged by an oil pipe line company which is subject to the Board's jurisdiction. Since the establishment of the Board in late 1959, no formal proceedings with respect to the regulation of rates, tolls, and tariffs have been held. Discussions have taken place, however, from time to time, on rate matters between the Board and companies under its jurisdiction, and following some of these conversations there have been downward alterations in tolls.

It appears highly possible that one of the major gas pipe line companies will file an application shortly for a hearing which, probably by successive stages, will enable the company and other interested persons to present on the public record their views concerning rate base, rate of return, cost of service, and possible rate revisions. It may be appropriate to proceed by way of public hearing in respect of certain other companies, on the initiative of the Board or of third parties affected. By whichever means the first major rate case may arise, it is certain to be complicated and drawn-out; for, whatever the eventual decision about rates and tolls as such, there will have to be intermediate decisions by the Board on a whole chain of ancillary matters which must be clarified before a well-founded rate decision can be reached.

In anticipation of this situation arising, the Board retained in 1968 a firm of chartered accountants experienced in rate regulatory work to conduct the first stages of a rates study relating to one of the smaller gas pipe line companies under the Board's jurisdiction.

This work is being carried out in conjunction with the Board's staff.

The rate regulatory work which now faces the Board is a new phase of the Board's development and, although the Board has been slowly creating a small staff knowledgeable in this field, it is anticipated that, because of the current stringent manpower restrictions, it will have to rely heavily on outside consul-

• 1005

tants to assist the existing staff in the preparation of the work connected with rate base and the sequential stages of the rate regulation process.

My purpose in mentioning this aspect of the Board's work at this time is to draw attention to the fact that funds for consultant services on the scale necessary for a major rate case were not included in the 1969-70 Estimates which you have before you, because at the time of preparation, we were by no means sure that such a case would arise prior to the close of the current fiscal year.

Honourable members will realize that while the Board has considerable discretion about whether or not a formal rate proceeding is necessary in given circumstances, and has been enabled so far to proceed in good conscience without one, partly because of the early stage of development of most of our pipe line companies, partly because of the intense competition among various forms of energy, there comes a time when this is no longer satisfactory. The Board may think it necessary to take the initiative.

Equally, a company which is going to the capital market for very large sums is constantly under pressure by lenders for clarification of the regulatory rules under which the company operates, and, even if capital were not becoming scarcer and more expensive, the pressure for such clarification would increase until one or other of the companies found it necessary to take the initiative in seeking formal clarification of these matters.

Now I would like to say a few words, Mr. Chairman, on the Board's Long Term Energy Forecast. This is a study on which the Board has been engaged for some time—dealing with domestic demand for energy consumed in Canada including fuel and losses in transmission and in refineries. The forecast covers a 24-year period from 1966 to 1990 and is

expected to be published during the later part of this year.

From the forecast, indications are that domestic demand for petroleum is expected to increase from 1.2 million barrels daily in 1966 to almost 3 million in 1990, or an annual growth of 3.8 per cent. Domestic demand west of the Ottawa Valley is forecast to increase from 680,000 barrels in 1966 to 1.6 million by 1990, for an annual growth of 3.6 per cent. The domestic demand for natural gas is forecast to increase from 700 billion cubic feet in 1966 to 2.6 trillion by 1990. This is a growth of 5.6 per cent per annum. The domestic demand for coal which was 26 million short tons in 1966 is expected to rise to 75 million by 1990, for an annual growth of 4.5 per cent. The entire growth of coal is destined for thermal generation of electricity. As much as 60 million tons may be used for this purpose in 1990. Out of the 75 million tons, 48 million are forecast to be consumed west of Ontario. The domestic demand for electricity is anticipated to grow from 157 billion kilowatthours to 618 billion in 1990 which represents an annual increase of 5.9 per cent.

The difficulties of forecasting supply are almost insuperable at this time. As a result, estimates by the staff of the Board of production in Canada vary from about 4 million barrels daily to almost 7 million by 1990. Production was 1.2 million barrels daily in 1968. Much will depend on levels of discovery, particularly in the "frontier areas", and accessibility to export market and levels of import.

In connection with natural gas supply, estimates of production of marketable gas range from 4.2 trillion cubic feet to 8.1 trillion in the year 1990. The most important variable will of course be the levels of discovery.

Now I would like to speak briefly about the oil situation. As you are aware, the picture with respect to markets for oil is not quite as clear as the outlook for markets of gas. There has recently been a lot of discussion about this and I know there will be a lot of discussion in the near future. The lack of clarity in the oil picture is related basically to the very important aspects surrounding the discovery of oil on the north slopes of Alaska.

• 1010

This discovery has had a two-fold effect. On the one hand, it has created great enthusiasm for the potential which may lie in

the northern regions in our country and in our Arctic islands. It has, in fact, encouraged and given the Canadian industry a new impetus to believe that a similar discovery may be made in the Canadian Arctic as well as in our off-shore waters. It means, however, that any new discovery must be associated with highly productive wells because of the expense involved in exploring and developing such wells in our northern regions.

On the other hand, the Alaska discovery has generated a certain amount of concern with respect to the growth of Canadian crude as an export to U.S. markets. This concern revolves around questions which are partly economic and partly of a policy nature between our two countries.

You will recall that the common interest of Canada and the United States in the expansion of cross-border movement of energy, particularly with respect to oil, was the subject of discussions between President Nixon and our Prime Minister during his visit to Washington in March. You are also aware that on the second of April, senior officials of the two governments met with a view to initiating meetings to identify and study areas of common interest in energy matters and to work out constructive solutions to current problems against the background of long standing arrangements. The Chairman and other representatives of the Board took part in this initial meeting. It is now necessary for them to continue the dialogue over the next little while with a view to determining the basis for policy decisions which have to be made.

Although I originally stated that the picture with respect to markets for oil was not quite as clear as it might be, because of the Prudhoe Bay find, I would not want to leave the impression that it was necessarily dark.

Previous mention has been made of the Board's supply and demand forecast. Dr. Howland could deal with the present stage of this 24-year forecast, but I should like to mention that from my discussions with the Board on this forecast, I was most impressed with the assessment of the U.S. markets over the next decade or two. This assessment indicates that the increasing U.S. demand for oil is fast approaching the maximum production capability of the domestic industry. Thus in the foreseeable future, we expect a situation where the U.S. domestic industry, producing at maximum, is unable to meet demand,

thereby forcing a relaxation of the U.S. import restrictions. This assessment appears to be valid even in the light of Prudhoe Bay developments.

Prudhoe Bay and Alaska North Slope developments will defer some increases in Canadian oil exports to the U.S. in and immediately after the 1972 period. However, given wise policies there will be a continued and growing demand in the United States markets for Canadian oil and gas. It is possible to see Prudhoe Bay as a threat to Canadian expectations but it is also possible to see this development as an encouragement to the ability of the North American continent to remain reasonably self sufficient for an essential element of its energy requirements. I do not think we should be overwhelmed by either view at this time. Our concern is to develop a full appreciation of the problems which call for policy considerations, and these are complex and involve other governments as well as this one.

If I might be permitted a few minutes more of your time, I would like to mention two surveys initiated by the Board to assess refinery capacity in relation to the estimated market demand for refined petroleum products. The first survey is related to Region III—Ontario west of the Ottawa Valley—and it has been completed. The second survey related to Regions I and II—the Atlantic Provinces and Quebec, respectively—is not yet complete.

With respect to the survey which has been completed, this covered the refineries and major marketers of refined petroleum products in Region III and was made in the Fall of 1968 to determine the outlook for refining capacity and the supply of products.

The results of this survey show that Ontario refining capacity in terms of crude oil throughput is currently about 340 thousand barrels per day and is being operated at or

• 1015

near full capacity. Additional capacity, to bring the total to 423 thousand barrels per day, is either under construction or in the final stages of planning, with all units scheduled to be on stream by 1972.

The assessment of the situation shows that coverage from Ontario refinery output of heavy fuel oil and "other product" demand may be expected to decline from current levels in percentage terms. This means that

with increasing demand there will, under present refining plans, be a continued and rapid increase of heavy fuel oil imports and transfers into Region III; the same is true in modified degree of this "other product" category. These trends in respect of the heavier and miscellaneous product categories are, in the main part, the consequence of deliberate yield pattern changes effected by the refiners themselves for economic reasons. As an illustration, the yield of heavy fuel oil in Ontario refineries is anticipated to decline from an average of 13.9 per cent in 1967 to an average of only 9.2 per cent in 1972. That is to say, by adjusting the nature of their refining process the heavy oil portion will decline in that fashion.

Of concern to the Board, however, is that in the recent past there have been a number of unscheduled refinery shutdowns, and should there be any recurrences or should product demand be greater than that presently forecast, the anticipated spare capacity would be inadequate. The Board believes careful thought should be given by the industry to some expansion beyond that indicated in the survey. With regard to the survey relating to the Atlantic Provinces and Quebec, the Board expects that it will have completed this within the next few weeks.

Mr. Chairman, with those introductory remarks covering the operations of the Board, I will conclude this morning and, of course, the members of the Board are here and are prepared to answer the questions of the members of the Committee.

The Chairman: Thank you, Mr. Lang. I think I should point out at this time that as Mr. Lang said in the beginning, he has to leave. He was due at another meeting at 10 o'clock. However, he has consented to come back to another meeting for any questions that arise which do not pertain directly to the officials here this morning. Thank you, Mr. Lang. We excuse you.

Mr. Harding: Mr. Chairman, just before the Minister goes, will copies of this statement be available to the members? It is not likely to be printed for a time.

Mr. Lang: We can make them available.

Mr. Harding: Are they available this morning?

Mr. Lang: I will get them for you in 20 minutes if you like.

Mr. Harding: I would like a copy.

The Chairman: In calling Vote 80 of the National Energy Board which you will find on pages 80 and 81 of the Blue Book and on pages 48 to 51 of the departmental book dealing with Estimates, I would first of all like to call upon Dr. Howland to introduce the remainder of his officials to the Committee.

Dr. R. D. Howland (Chairman, National Energy Board): Thank you Mr. Chairman. I would like to say also how much we appreciate the courtesy of the Committee in allowing us to come today rather than on Tuesday when we were under pretty heavy pressure.

I have with me today the Vice-chairman of the Board, Mr. Fraser, who has already I think been introduced, and Mr. Briggs and Mr. Stabback whom I think the Minister introduced. To the right of Mr. Stabback is Mr. Stead who is our Secretary. Behind him is Mr. Whittle, the Assistant Secretary; Mr. Scotland, the Chief Engineer of the Board, Mr. Lamar, the Counsel of the Board, and Mr. Schwarz, who is one of our economists.

• 1020

I have particularly, Mr. Chairman, brought with the Board today Mr. Scotland and Mr. Schwarz in case the Committee thought it wished to discuss in greater detail the matter of the Energy Board's forecast.

Mr. Chairman, I might also, if I have your permission, make a reference to the various reports which have been given to members as they came in today. These are some of the contributions of our staff. The first one to which I draw your attention, sir, is an Economic Analysis of Generation Patterns on Future Power Systems by a member of our staff, Edwin A. Moore, which I think members will find a very useful contribution to this subject. There is also a paper by Mr. Bell, the Senior Engineer with the Electrical Division, on Uranium Versus Fossil Fuels. Then, Mr. Chairman, there is something which I think members will find very useful, as has industry and the provincial governments. In the course of doing our energy forecast it was necessary to develop somewhat more authentic authoritative background material. This took several years of work by the Board's staff, and I have great pleasure in having the members receive this report on the Consolidation of Historical Data on Energy Supply and Demand Balances. I think members may

find this very useful in getting a background of some of the present problems.

I think everybody, Mr. Chairman, has had copies given to them. There are more copies available and they can be distributed now, if you wish.

The Chairman: Gentlemen, before I ask for questions on this item, I notice we have a quorum now. I wonder if we could have a motion that the minutes up to this point in the meeting be printed.

Mr. Harding: I move that the minutes prior to this point in the meeting be printed.

Motion agreed to.

The Chairman: I am now prepared to accept questions. Mr. Aiken, would you proceed.

Mr. Aiken: Mr. Chairman, I think I should start out by saying that the Board covers such a very broad and important field that it is difficult to know just where to start when they have so many problems before them, as we ourselves also have. I think I should say that the total budget and the staff that the Board carries seems to be reasonable both financially and in terms of numbers for the tremendous job the Board has to do. I think in this instance we are not going to quibble about expenditures—at least I, for one, am not. We are very interested in the Board proceeding to do the very best job they can to meet the very serious and important problems we have to face in Canada.

I want to ask just two or three general questions to start. What part does the Board play in establishing an oil and gas policy within the governmental structure? It is my understanding that by and large the Board is an adviser and that in the long run the government must make the decisions on matters that have financial and political implications. Could we be told to what extent the National Energy Board projects matters of policy particularly in such things as exports, imports, external pipelines and so forth? This is a subject that to me is somewhat vague and I think a better understanding of exactly how the government apparatus works in this particular field might help.

Dr. Howland: Mr. Chairman, that is a question that sometimes puzzles the Board too. However, we have been privileged to be charged with the preparation of documents which measure the facts which must be of

some importance to the government. We tend to analyse these to the point of indicating the matters which, in our judgment, must be matters of consideration for policy making. We obviously work as part of the machinery of inter-governmental discussions. In regard to exports and the arrangements which the government periodically considers and discusses with the United States, we are part of an interdepartmental group of people who look at the facts of the matter and typically the Board, because of its administrative responsibilities on the oil policy, is charged with the responsibility of very careful analysis of the facts of the situation. Again we try to bring forward for interdepartmental discussions and eventually to ministers the considerations which enter into these policy considerations.

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Does that cover your question, Mr. Aiken?

Mr. Aiken: Yes, very much. I assume that your position is one of fact-finding and advising.

Dr. Howland: That is correct. Obviously you would recognize, Mr. Aiken, that in the interrelationships of departments there are different vantage points which are very legitimate ones and they are all brought to bear on policy considerations.

Mr. Aiken: Are there any special studies under way in connection with the implications of the Prudhoe Bay discoveries?

Dr. Howland: The answer to that is very much, yes, and I am prepared today to make a statement about this, if you would like to listen to it. If it is of interest to the Committee, we have here today the staff of the Board who have been concerned with the Board in trying to make the assumptions which are very necessary for any assessment as reasonable as possible. I could, if the Committee wishes, proceed to do this.

Mr. Aiken: Mr. Chairman, as this subject is foremost in everyone's mind at the moment I would be perfectly happy if this particular subject were dealt with now and a statement given on it.

Dr. Howland: Mr. Chairman, it is a complicated matter when one looks into the future at all, it is more complicated when some of the matters are not yet clarified—and

I refer particularly to the size and the nature of the North Slope discovery. I think all of us recognize that this is of great significance.

Mr. Chairman, if you wish to discuss the general forecast, I am prepared to do this, but it may be that you would rather me direct my remarks to the question that Mr. Aiken has foremost in his mind which is the possible impact of Prudhoe Bay on the Canadian industry.

I might say that the Board engages in forecasting because these exercises bring to the fore the importance of the various assumptions, you have to make. It is not particularly interested in the exact figures which emerge from forecasting. It is in fact concerned that these do not assume an aura of magic or au-

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thority. As a result of forecasting, the Board considers that it can secure a sense of perspective on a number of problems with which it has to deal. It is also in a position then to anticipate policy questions and refer these to government for decision.

I might add that normally the Board publishes its forecasts as staff papers and apart from assuring itself of the standard of the work, is satisfied that this is the proper procedure. This, the Committee will I think agree, avoids the danger of applicants relying on the Board's estimates and enables the Board to take an objective approach to matters coming before it in its quasi-judicial functions. Regarding the section of the forecast dealing with U.S. markets for oil and gas, however, the Board has actively participated with the staff in the formulation of some of the assumptions. I must advise you that the forecast is quite preliminary in this aspect of things and that we are expecting to refine it from time to time over the next few weeks and months. I expect that we will be supplementing this part of the forecast by estimating market potential on a year-to-year basis.

Our present Board forecast regarding U.S. markets in 1990 is in fact an extension of the work we undertook in 1966 and 1967 which formed an important background to discussions with the U.S. regarding the construction of two pipeline extensions into the U.S.—the Aurora-Glacier system expansion and the IPL-Lakehead loop through Chicago.

These studies not only indicated an immediate shortage of pipeline capacity in

certain areas of the U.S. to deliver crude to certain market areas served by Canada, but also suggested, statistically at about 1972, an emerging gap in U.S. capacity to supply from indigenous sources its rapidly growing demand for petroleum products.

Our recent efforts have been directed to assessing the impact of the Alaska North Slope discoveries on the "gap" to which I have referred.

Before drawing your attention to some graphs which have been developed in connection with the Board's forecast, there are a number of perspectives to which I would like to draw your attention. These perspectives are, of course, only justified if the Board's estimates are reasonably sound.

Assuming that the U.S. wishes to restrict imports from overseas supply to present percentage levels and maintain its present ratio of reserves to production, it will be necessary for the U.S. according to our estimates, to assure itself of some 80 billion barrels of new reserves by 1980. Perhaps I should repeat that figure. The United States will have to assure itself of some 80 billion barrels of new reserves by 1980.

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It is against this figure that one sets the various estimates of the extent of the North Slope reserves in Alaska. These vary from 5 to 50 billion, with the probabilities being, according to some well-informed people, in the order of 20 billion and some 30 billion being an optimistic estimate.

Our estimates also indicate that by 1975 the U.S. will be consuming some 5 billion barrels of its domestic reserves each year. This figure increases to some $5\frac{1}{2}$ to 6 billion barrels by 1980. Thus, Prudhoe Bay at 20 billion barrels may not amount to more than three years of new supply and at 30 million no more than five years.

Mr. Chairman, I think that these perspectives are important to consideration of policy of governments and for this reason the Board will be progressively refining its estimates in association with industry and agencies of other governments as these are appropriate.

We realize that industry—oil producers and marketers, including our pipelining companies—has a further perspective, namely, its market expectations next month.

There is no doubt that the advent of Alaskan North Slope crude supplies into U.S. markets will have an impact on our Canadian export expectations. The extent of the impact, however, will depend on policies of government as much as on economic factors and this is beyond my capacity to forecast. I find it hard to believe that some considerable weight will not be given to the perspectives which I have noted, as well as to the historic significance of Canadian supply particularly to District V, in times of past emergencies.

Mr. Chairman, may I now draw your attention to the charts to which I referred and to which Mr. Scotland and Mr. Schwarz can address themselves before there are questions. Perhaps we could have those charts distributed.

I hope, Mr. Chairman, that the Committee will find the graphic form a little better to promote discussion than some of the statistical tables.

Mr. Aiken: As these are being distributed, could I ask a question about the forecasts? Is the Board, in its forecasting, looking into the possibilities of changes in the need for oil and gas particularly in view of possible changes in motor transportation, battery operated vehicles, and so forth? Have these been considered? Are they part of the forecasts, or are they too remote even to think about?

Dr. Howland: No, they are very much a part of the whole consideration, Mr. Aiken. Not only does the Board consult with industry but we do as well. We have had a team of five staff members go right across the country, talking not only to industry, but also to provincial governments concerned with these matters. We do investigate, as much as we can, with the National Research Council or with anyone we can as to what are the technological developments which might lead to a change in the pattern of consumption. We do attempt as best we can to take note of the possible changes in the use of different forms of energy.

Mr. Deakon: Mr. Chairman, may I interject please? I was wondering whether it would be possible to obtain the statement just made by Dr. Howland for the members of the Committee?

The Chairman: They are being copied now, Mr. Deakon.

Dr. Howland: I am sorry, Mr. Chairman, that I do not have copies available. I wrote it yesterday afternoon.

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Mr. Aiken: Have you completed the statement?

Dr. Howland: Yes, I have. Mr. Scotland, it would be useful if you could outline the significance of the three charts. Could you please do that, Mr. Scotland?

The Chairman: Come to the front please, Mr. Scotland.

Mr. W. A. Scotland (Chief Engineer, Engineering Branch, National Energy Board): Mr. Chairman and members of the Committee, what you have before you is a set of three figures showing the supply and demand as we forecast it for the United States. For each figure a different rate of production from the Alaska North Slope has been assumed. For Figure 1 the assumption is 1 million barrels per day; for Figure 2 the assumption is 2.5 million barrels a day, and for Figure 3 it is 4 million barrels per day.

Returning to Figure 1, the top line is our estimate of the United States demand for petroleum and petroleum products. We estimate that demand in the United States will grow by 3.2 per cent per annum until 1975 and thereafter to 1990 at the rate of 3 per cent per annum. I might point out that in recent years the United States demand has been growing at a substantially greater rate. Forecasts have been published by United States government agencies and industry in that country which project higher growth rates than I have shown here. Even so, by 1990 it is our prediction that the United States will be consuming some 26 million barrels of oil a day. This is 9.5 billion barrels in the year 1990 which is a figure quite comparable to the Canadian reserves of crude oil and natural gas at the end of 1968.

I now draw your attention to the second line on the figure and the space between the top two lines which represents our assessment of United States imports of overseas tanker borne crude and products. These imports represent, in a manner of speaking, the exposure of the United States to the uncertainties of supply. They have been projected at the same percentage of demand as these imports represented in 1968. They grow from 2.334 million barrels per day in 1968 to 4.5 million barrels per day in 1990.

The lowest curve on the chart is our assessment of United States production from what

we call the lower 48 states, plus some production from Cook Inlet in Alaska. You will notice that among the three charts this curve varies. In general it attains its maximum in 1974 to 1975 at 12 million barrels per day and then it declines gradually. The time at which the decline begins and the rate of decline depends on whether we are dealing with 1 million barrels a day of Alaska North Slope or 4 million barrels a day.

The space between the lower two curves represents the assumed production from the Alaska North Slope. You will note that it enters United States markets in 1972, the projected completion date of the Trans Alaska

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Pipe Line System, at an initial rate of 400,000 barrels per day and increases at 400,000 barrels per day each year thereafter until it attains the rate of 1 million or 2.5 million or 4 million barrels a day, as the case may be.

The meat in the sandwich as far as Canada is concerned is the cross-hatched portion in the middle between United States demand and its own ability to produce. This is the supply gap to which Dr. Howland referred. On these charts it has been broken into two segments. One labeled as "Canadian Opportunity" and one labeled as "Synthetic Oil or Special Arrangement Imports". A completely arbitrary assumption has been made that Canada will have an opportunity and will aspire to filling 50 per cent of this gap. At this rate Canada would be supplying from 4.75 million barrels per day, as shown on Figure 1, to 3.7 million barrels per day, as shown on Figure 3, depending on the volume of Alaska North Slope production. I would point out that this gap grows extremely rapidly. It begins in the period between 1974 and 1977, depending upon the rate of Alaska North Slope production.

I think that is the basic outline of the three charts. I forgot to say, the United States demand is common to all three. The production rate from the United States own sources differs on the three charts. The gap is the failure of United States resources to meet its demand.

The Chairman: Thank you very much, Mr. Scotland. Have you finished Mr. Aiken?

Mr. Aiken: Mr. Chairman, as this was an answer to my question, I think I am over time. I have other questions, but I will pass for the moment.

The Chairman: I realize the answers have been necessarily lengthy, so if you do not mind I think we should go on and give somebody else a chance.

Mr. Aiken: I wonder if I could just ask one question about this chart? You show the Canadian opportunity here at 4.75 million barrels per day. What is your estimate of our available supplies for export to match this?

Mr. Scotland: Our analysis of Canadian supply has been broken into two portions. The first portion deals with the examination of our presently producing areas, the western Canadian sedimentary basin. It is reasonably clear from our examination of that single supply source, without the tar sands, that Canada would not be able to take full advantage of the opportunity to export the volume shown on Figure 1 beyond 1980.

Now the second part of our analysis of supply has dealt with what we call our frontier areas; that is, the Mackenzie Delta, the Arctic Islands, Hudson Bay, the St. Lawrence lowlands, the Gaspé Peninsula, the east and west coast offshore. Our examination of our frontier areas suggests that we could quite reasonably expect to fill the export volumes shown on Figure 1, once again, without recourse to the tar sands. This is not to sug-

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gest that the tar sands will not be in heavy production before this, but they are a special case unto themselves and I have been speaking just about the conventional industry in the western sedimentary basin or in our frontier areas.

Mr. Aiken: That is actually a very optimistic picture for North American production in the foreseeable future.

Mr. Scotland: Yes, it is. I think what we have shown is the emergence of a very large need for imported oil in the United States. On the supply side we have shown in our studies that our frontier areas potentially can meet that growing need and it is also an interesting question of timing: the emergence of this massive need for imports in the United States is quite in harness with the potential development of our frontier area resources.

Mr. Aiken: Thank you.

The Chairman: I have on my list from herein, Mr. Harding, Mr. Yewchuk, Mr. Deakon, and Mr. Hymmen. Mr. Harding?

Mr. Harding: Mr. Chairman, if some of the members have questions on the charts, and as I do not, I could let them go ahead of me.

The Chairman: Mr. Hymmen has indicated he has, so I will call on him.

Mr. Hymmen: Mr. Chairman, I have a question to ask Mr. Scotland on the chart. I wonder whether he or Dr. Howland or someone could explain the section on synthetic oil which appears to start in 1974, and what the situation in regard synthetic oil is?

Dr. Howland: This refers, Mr. Hymmen, to US synthetic crudes from the oil shales or from the gasoline from coal. It is an arbitrary assumption. As best we can forecast around that time there might be this type of development. I think the somewhat optimistic picture that we are painting today is possibly a little bit of reaction to complete catastrophe. However, it is quite significant that the companies which have discovered the very large deposits of oil in Alaska are, in fact, still proceeding to take an active part in the development of synthetics in the United States and in Canada. So, this could be an optimistic picture.

We have had a great deal of discussion among ourselves, Mr. Hymmen, on the matter of the United States domestic industry and its capacity to grow. We, I think, have taken the rather optimistic appraisal of that capacity in this forecast. There are those who are quite well informed who advise us that the industry in the United States has possibly reached its peak now. We have advanced the present level by some 2 million barrels for the next few years and we have postponed this type of peaking by the United States domestic industry. So our figures are obviously open to a great deal of questioning right the way through the forecast. All I can say to you is that we have used as careful a judgment as we can bring to bear on the matter and, again we would indicate to the Committee our desire that in your thinking about this matter you consider the broad perspectives to which we have referred rather than the detail of the figure. We have been very careful in trying to get the best judgment we can apply to the factors which make this chart and the lines in the chart vary.

The Chairman: Were there any other questions pertaining to the charts? All right, Mr. Harding?

Mr. Harding: Thank you, Mr. Chairman. I would like a little more time actually to study the material which has been presented today as I think it presents the opportunity for lots of questioning and some very, very interesting lines of thought that I presume members will be pursuing.

However, I would like to come back to a few remarks that you made in the presentation. I am not sure whether it was the Minister or Dr. Howland who indicated that BC Hydro had two export licence applications before the board. Are we able to discuss these at this particular meeting, as to the amount of power that they wish to export and the term

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over which this export is to take place? Are these pertinent questions? I would certainly like this information if it were available?

Dr. Howland: I think, Mr. Chairman, it is quite satisfactory for Mr. Harding to ask about quantities involved because once an application is before the board, Mr. Harding, it is public information. Mr. Briggs, would be glad to discuss with you.

Mr. Harding: Would Mr. Briggs be able to tell the Committee the quantity of power that is to be exported under each of these licences? I understand there are two export applications from the BC Hydro. Could we have the term involved and the utility to which it is going.

Mr. Briggs: Mr. Chairman, there are three applications before the board from the BC Hydro Power Authority. I do not have these applications with me. However, basically the three applications consist of first, an application to export firm power and energy to the Point Roberts area of the State of Washington. It involves a quite limited amount of power, and I do not at this moment recollect the terms of the application. It is simply enough power to supply the Point Roberts area of the United States which is segregated, as you recall, from the State of Washington by Boundary Bay.

The second application is one to export firm energy at the rate of 100 million kilowatt hours per month for 17 consecutive months. This would begin, if my memory is correct—and I am not too sure of this—sometime in 1970. This arrangement would, by and large, utilize steam-generated energy from the Burrard steam plant which at that time they

expect will be surplus to the British Columbia requirements, because, as the members will realize, the lines are now operative from the new Portage Mountain Dam on the Peace River and will be delivering substantial quantities of energy to south-western BC from the Portage Mountain plant.

The third application is for the export of

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quantities of energy up to 4 billion kilowatt hours per annum, but the basis of this export is optional with the BC federal authorities. In other words, it is interruptible energy, and would be exported only during those times and occasions when that energy is surplus to the requirements of connected Canadian power loads, and in the terms of the application the B.C. Hydro Authority will ascertain Canadian needs before attempting to export any portion of this energy. So they would maintain complete flexibility with the amount, the quantity, and the time when this would be exported. As you will be fully aware, Mr. Harding, the new 500,000 volt connections between the Bonneville Power Authority of the northwestern United States and the very large power utilities in the States of California, Nevada and Arizona have been completed. Two more direct current lines are being constructed as well between the northwestern United States and the southwestern United States, so there will be substantial transmission capacity to get surplus Canadian energy down into the markets if and when power shortages develop, or if and when it is advantageous from the point of view of price to shut down steam generation in those power markets and replace it for the time being with surplus energy from Canada.

Mr. Harding: May I ask what price has been indicated in each of these? I am not too interested in the Point Roberts one, actually I think it is a logical...

Dr. Howland: It is a border accommodation.

Mr. Harding: Yes, it is just a tiny little area and I think it makes sense to supply it from the Canadian side. What price has been indicated in two and three? I would like to ask a similar question about the exports from Manitoba.

Mr. Briggs: I think, Mr. Harding, I have to say that the matter of price is one of the

main points which our Board will be raising with B.C. Hydro when the hearing does occur.

Mr. Harding: I see. Have they indicated a price in this over-all picture and you are not satisfied with it, or is this something that the Board and the utility...

Mr. Briggs: The situation is that the price has to be adjustable.

Mr. Harding: I see.

Mr. Briggs: The situation is along these lines. If, for example, in July of 1972 there were the opportunity to sell energy, say 100 million kilowatt hours of energy, to California, that could be sold if the price of that energy were slightly less than the cost of generating it in the California markets or in the California steam plants. So there has to be some flexibility on prices at which the energy is sold in order to achieve the sale.

Mr. Harding: May I inquire about the amount and the place where the Manitoba power will be going?

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Mr. Briggs: The Manitoba power would be, by and large, from the new Kettle Falls plant on the Nelson River. As you know, that is being connected with southern Manitoba by a direct current transmission line. It is proposed to interconnect the Manitoba Hydro Electric Board system with a high voltage network which has been built across the States of North Dakota, Minnesota, Wisconsin and two or three neighbouring states. So if surplus power is available from Manitoba it may be sold to half a dozen or more power utilities connected with this U.S. transmission grid. Similar considerations apply on price to the answer I gave you, Mr. Harding, about British Columbia.

Mr. Harding: I would like to come back on another question.

Dr. Howland: Mr. Harding, before you depart from that may I just draw your attention to the National Energy Board Act which may give you some comfort. You have charged this Board, under Part VI of the Act, with dealing with these matters. I would like to recall for you that this Board is charged in measuring these applications with these two matters in our Act. It states:

83. Upon an application for a licence the Board shall have regard to all consid-

erations that appear to it to be relevant and, without limiting the generality of the foregoing, the Board shall satisfy itself that

(a) the quantity of gas or power to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada having regard to the trends in the discovery of gas in Canada; and

(b) the price to be charged by an applicant for gas or power exported by him is just and reasonable in relation to the public interest.

I do not know whether that gives you some comfort but you have a Board that you have charged with determining these matters very carefully and we pledge ourselves to do that, sir.

Mr. Harding: Thank you, Dr. Howland. There are a number of other questions, Mr. Chairman, I would like to pursue on this particular matter. It seems to me that we are hooking up with the United States grid lines. Over the years we have heard a tremendous amount of talk about a national energy grid for Canada and it seems to me that this Canadian grid just has not materialized. Have surveys for such a grid been completed? Just where does the Board stand in relation to this Canadian grid, which to my way of thinking is absolutely essential if we are to get development in a number of areas in Canada which desperately need power and which must have power if they are going to have economic development. We seem to be going North and South in every single province with additional power and I wonder whether this idea has gone by the board, whether you have decided that it is not an economic venture now, or whether the provinces are not co-operating, or just what it is that seems to be holding it up.

Mr. Briggs: You may recall, Mr. Harding, that a report of the Department of Energy, Mines and Resources was tabled in the House some time last fall, I think, although I am unable at the moment to tell you when it was tabled. This report dealt in detail with a study which had been made on a trans-Canada grid. While I do not have a copy of that report with me and I am unable to speak definitely in connection with the recommendations in that report, nevertheless, Mr. Chairman, by and large, my over-all impres-

sion of those recommendations is that the matter of interconnection between the various Canadian provinces and the various economic regions of Canada should be considered on a regional basis so that those benefits which were most obvious, most direct, and most appropriate could be taken advantage of first.

As all the members of the Committee are aware, the provinces themselves control this particular natural resource and furthermore,

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most of the provinces have created their own public utility commissions for the production and transmission of power within their province. We all realize the jealousy with which the provinces guard this prerogative of theirs. We too must observe this situation that exists. Nevertheless, we in the Energy Board have under study this very problem of the benefits that can be obtained by this regional type of interconnection. The results of these studies are not available to me at the present time but this is one of the quite major things the Board is undertaking with its staff.

I do have to say that the demands on our staff in the electric power group are very great for a number of reasons. We have three senior engineers in our group of electrical engineers supported by four or five other technical persons. Therefore, you see our scope for conducting extensive examinations on many facets of the Canadian power industry are distinctly limited. Within that limitation we are attempting to carry out what appear to us to be the most beneficial of these studies and examinations.

Mr. Harding: Mr. Chairman, is my time nearly up?

The Chairman: Yes, it has been for some time.

Mr. Harding: Mr. Chairman, I know we have ten minutes and other members have questions to ask but I would like to come back to this topic a little later on again. I will certainly pass now.

The Chairman: I did let you go beyond 15 minutes in view of the fact that Mr. Aiken had so much time. The answers were so lengthy that we had to take this into consideration.

Mr. Yewchuk: Mr. Chairman, I wanted to ask a couple of questions pertaining to the Athabasca tar sands which you mentioned in

your preliminary statement, I think, or one of the men did. How do the reserves in Prudhoe Bay compare with those in the tar sand region?

Dr. Howland: It is rather hard to give a definition of what is at Prudhoe Bay now but if you assumed, say, 20 billion which is a very, very large reserve, that is twice as much as in Alberta, for Prudhoe Bay you would be comparing 20 billion with something like 300 billion for the tar sands. Again, the tar sands by definition are difficult to define. Are we talking about recoverable reserves or are we talking about the tar sands per se without reference to the heavy oil which is somewhat similar in characteristic but is not engaged in surrounding sand, if we might put it that way? It is heavy and difficult to recover in the normal process of drilling and recovering from drill holes. However, to answer your question correctly, let us put 30 billion for Prudhoe Bay and you would have to multiply that by 10 to get an idea of the relative magnitudes.

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Mr. Yewchuk: Has the discovery in Alaska inhibited development of the tar sands in any way as far as you are concerned?

Dr. Howland: I think it is significant that the synthetic crude group who had an application before the Alberta Oil and Gas Conservation Board was willing to postpone its application for two or three years. I think it was two.

Mr. Yewchuk: What is the policy for the speed with which tar sand development will be allowed in the light of the Alaska discovery and so on? Is there some sort of a limit set on how quickly the tar sand development will take place now?

Dr. Howland: The Alberta government controls this and has set a limitation. They had a formula which related the potential production from the Alaska tar sands or oil sands to a certain proportion of the total market for Alberta oil. However, they recently, last year I believe, made a further liberalization of that policy by allowing developments for companies which would guarantee access to new markets, and they attempted to define what a new market was.

Mr. Yewchuk: It has been stated that if tar sand development were allowed to proceed

without too much restriction it would make the conventional oil industry obsolete. Is this correct?

Dr. Howland: I think that is a matter of opinion. There are some who are very optimistic about oil sand production just as there are optimists about the Manhattan getting through the Northwest Passage, or whatever we call those northern waters. There are pessimists on the other side who say that oil sand production is a decade away. I imagine the Great Canadian Oil Company sometimes felt it was a little further away than they had thought because they have had some production problems.

It is quite significant though to note that we have, in fact, in Canada a first commercial plant operating in the oil sands and there is not any doubt in my mind that the companies concerned will defeat the problems which do confront them in the development of this very large and valuable resource.

Mr. Yewchuk: Can you make any projections concerning further developments in the tar sand area now at the present time, say over the next few years? When do you expect the tar sands to be fully developed, one might say?

Dr. Howland: I think our tendency in our forecast has been to delay the advent of very large production from the oil sands. However, if one did not feel optimistic about discovery of oil in Canada in the Mackenzie Delta, or the Arctic Islands or offshore, I think the significance of the estimates which we have discussed with you this morning is that there would be a fairly rapid development of the oil sands within a few years to meet this gap in supply in the United States.

Mr. Yewchuk: Is it your view that if oil was discovered in the Arctic Islands it would be more economic to bring it out from there than it would be to proceed with the development of the tar sands at this time?

Dr. Howland: If the discovery is of the nature of a repeat of the Prudhoe Bay discovery, that is, highly productive wells, I do not believe that the oil sand could compete with that if the transportation proved to be practical. You have two things: First, the production cost would tend to be lower than oil sand; second, your tanker-borne transportation is more efficient than your pipelining.

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Mr. Yewchuk: Thank you, Mr. Chairman.

The Chairman: Mr. Deakon.

Mr. Deakon: Thank you, Mr. Chairman. I would like to ask a few questions of Dr. Howland regarding the oil situation in Canada. Can you please advise us, Dr. Howland, whether or not we are presently satisfying the American demand for oil?

Dr. Howland: If, sir, you mean are we sending all that they would like, the answer is no.

Mr. Deakon: Why do we not do that?

Dr. Howland: If we are talking about District V, I should say as against no, that we are sending into District V something like 200,000 barrels a day at the present time. So I should correct my first answer that in District V we are sending out all that the requirement of that area is. On the other area there is an existing arrangement between the two countries, and Mr. Lang has made his statement in the House of Commons which indicates that the spirit of that agreement is being respected by Canada.

Mr. Deakon: Could you advise us how much Venezuelan oil enters Canada?

Dr. Howland: It is about 69 per cent of what we bring in. In 1968 the daily average for the year was 330,000 barrels a day, approximately.

Mr. Deakon: Is that mostly being shipped to the Montreal area?

Dr. Howland: I am talking here of the imported crude oil. This does not include the products which also come from Venezuela.

Mr. Deakon: I am interested in the crude oil only. Is that mainly towards the Montreal area?

Dr. Howland: Oh yes. The big volume demand is in Montreal.

Mr. Deakon: In view of the fact, Dr. Howland, that you mentioned in your first answer that we are not satisfying completely the demands, outside of one area there, of the United States, do you foresee any danger to our markets, United States markets, by this Venezuelan importation of crude oil?

Dr. Howland: Any danger to...?

Mr. Deakon: To our future markets in the United States by this Venezuelan oil going to Canada and possibly being transported from

Canada back to the States to be refined in Buffalo, say, and Chicago.

Dr. Howland: I am afraid I do not quite understand the point of the question. I would say in general, sir, that I think it has been of some consideration to the United States in looking at our exports that we do provide a substantial market for Venezuelan crude. It was quite significant, I think, that during the first part of the oil policy program instituted in 1961, for the first few years when we advised the United States Government of the program, it did entail targets for growth in Canada, approximately half of which would be achieved by an expansion of domestic markets and half by expansion into United States markets. During the first three or four years of the program our imports of Venezuelan crude approximately equalled the rate of our growth of exports, and in view of the importance of Venezuela to Canada and the United States, I think this was a very fortunate matter and made it easier for the United

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States to allow—within their program which is a very big and somewhat expensive program—the growth from Canada and no growth to Venezuela in the terms of exports to the United States.

Mr. Deakon: Dr. Howland, my point in asking this question is that in view of the fact of your statement that we are not satisfying completely the demands that are being made upon us by the United States markets, if for example the United States turns to the purchase of Venezuelan oil to subsidize the amount that they want that we are not willing to give them, do you foresee any danger in us losing our United States markets in the future because of this situation?

Dr. Howland: I do not foresee that, but I am not a prophet either. One must consider, I suggest, sir, that we are talking about keeping an arrangement between the two countries for 1967, and the Venezuelan imports into the United States have already been set for this year by reason of the issuance of tickets for this year. So that anything that we export above the 306,000 barrels per day level, which was used by the United States government in setting their objectives for 1967, including the amount of imports of offshore crude into the United States—if I say offshore, I mean tanker-borne foreign crude—they already set this by reason of—I am sorry I missed the point. The point I am trying to

make is that this has already been set into their program, and the extent to which we exceed 306,000 will have to come at the expense of the United States indigenous industry, not at any expense to Venezuela. Nor will it be any encouragement to Venezuela for 1969.

Mr. Deakon: Dr. Howland, do you foresee any possibility of a pipeline to transmit this oil from the northern slopes of Alaska down to the south-central States of the United States through Canada?

Dr. Howland: I think there is a distinct possibility. You are talking about a Mackenzie River—I think there is a distinct possibility.

Mr. Deakon: One last question, Mr. Chairman. Does the United States require, or permit, or restrict only a certain percentage of the transmission of our oil to the United States, say a percentage of their production or consumption that we are allowed to transmit to the States?

Dr. Howland: Do you mean do they put any restriction on the interprovincial lakehead system as to how much will come through the United States from this part of Canada?

Mr. Deakon: That is right.

Dr. Howland: None at all.

Mr. Deakon: Thank you, Mr. Chairman.

The Chairman: Mr. Hymmen.

Mr. Hymmen: Dr. Howland, while our national oil policy has not been static, am I correct in assuming that it is essentially the same as it was when it was introduced in 1961 regarding targets and controls?

Dr. Howland: I think the definitions of the areas are the same. You will recall that the basic policy was to expand our markets in Canada so that everything west of the Ottawa Valley would be supplied substantially with products refined from Canadian crude. The second dimension of the program was that the industry would be expected to maximize its exports and the government's policy has, as far as I am concerned, been in that direction.

Mr. Hymmen: I would like to ask probably a rather hoary question because it has been introduced so many, many times. What is the situation on the pipeline to Montreal, economically, now and in the future, in contrast to Venezuelan imports?

• 1130

Dr. Howland: You made that a double-barrelled question, sir.

Mr. Hymmen: Well, you can give two answers.

Dr. Howland: I think the picture today is that under existing conditions, Canadian crude is not competitive with imported crude in Montreal. Whether it will be, is another question. Are we talking purely about the economics of Alberta oil in the future, or are we talking about the possibility of Arctic islands, Hudson Bay, and eastern discoveries where the picture could emerge that Canadian crude becomes very competitive, and somewhat exclusive of imported crudes?

Mr. Hymmen: Sir, I wonder, if the Committee could have some figures. What is the estimated cost of Alberta crude laid down in Montreal? I presume we would have to include the amortization of a pipeline?

Dr. Howland: I think the detailed figures are hard to face before a Committee and I must advise you that the Board has not recently completed studies which would enable us to respond carefully to this question. However, I think the Board's perspective on this might be seen by looking at the published figures of DBS, which indicate that the average landed price of imported crudes into Montreal are of the order of \$2.57 per barrel. The average price of Alberta crude is probably of the same order in Alberta. Looking again purely for broad figures, the price of Canadian oil in Toronto is of the order of—if my memory is correct—about \$3.25 a barrel. To take oil farther, or even a branch line of Interprovincial from, say, Sault Ste. Marie and land Western Canadian crude in Montreal cheaper than in Toronto seems to be pressing the matter of economics a long way.

One could indicate, though, that it is not beyond the possibilities of developments as they take place that this picture could change. Under today's circumstances, I find it rather difficult to suggest to my colleagues that we engage heavily in the detailed analysis which would be demanded on the economics of a Montreal pipe line. I think the issue would become more alive to the Board if it were a matter of a policy consideration.

Mr. Hymmen: I have another question. I understand that there may be a refinery in Montreal which will refine Venezuelan oil,

and which is threatening to put their product in the Toronto market. Are you aware of this?

Dr. Howland: I have heard about it. I read the papers too.

Mr. Hymmen: What would the attitude of the Board be?

Dr. Howland: Well, knowing the company involved and knowing how responsible it is, and has been, frankly I have not been concerned. I know that they have no such policy in mind, and have made alternative arrangements.

• 1135

Mr. Hymmen: Thank you, Mr. Chairman.

Dr. Howland: Mr. Chairman, may I make one comment. It relates to my reply to Mr. Aiken. Mr. Deakon, you asked me a question about the role of the Board on advising the government. What I should have said when you asked me whether or not I thought the Mackenzie Delta line had some possibilities, was that we are very actively engaged in the Task Force group, and are participating fully with this committee of Northern Affairs, Transport, and Energy, Mines and Resources and the Energy Board, which is chaired by Dr. Claude Isbister.

The Chairman: Those are all the names which I have on the first round for questioning. Mr. Deakon, I saw you with your hand up. Did you have something that dealt with Mr. Hymmen's remarks?

Mr. Deakon: Yes, I would like to ask a question which is not on the oil situation. It is directed more towards the electrical power delivery to the Northwest and Yukon. Recently while visiting the Northwest Territories and Yukon, we spoke to many people—the consumers who are utilizing this power source—and they were complaining that they were paying excessively high costs for the use of this power. I was wondering—since your Board has something to do with levying the tolls on transmission—is there any way in which you can assist to alleviate this high cost and burden upon the average consumer in the Yukon and Northwest Territories? I will give you an example. One person with whom I spoke to said that he paid \$240 in one month for the use of electricity in just an ordinary home.

Dr. Howland: I am afraid we cannot really do much about this, sir. This is not under our jurisdiction.

Mr. Orange: Why?

Dr. Howland: I think that is a question you should ask yourselves, not the Board.

Mr. Deakon: It is energy; why can you not do anything about it?

Dr. Howland: Well, Parliament did not see fit in the formulation of our Act to give the Board, in regard to electrical energy, any responsibility regarding the interprovincial movement or internal, intraprovincial sale or distribution. That is not in our Act. If Mr. Orange wishes to raise that matter with his colleagues, it is different.

Mr. Deakon: No, but Dr. Howland—I do not want to get into an argument here—the Northwest Territories and Yukon do not really have provincial status as such, and are actually mostly governed by appointments from the federal government. I know that you elect certain people to the Council, but the final word actually comes from the federal jurisdiction. That is why I thought that, perhaps in this regard, you should have some say in the transmission of the energy in these areas.

Dr. Howland: I will be very glad to relay your comments to my good friend Mr. MacDonald to see whether or not he has anything that he can do for you, sir.

The Chairman: That is a good idea for Mr. Orange's next Private Member's Bill. Mr. Harding.

Mr. Harding: Is this the second round, Mr. Chairman?

The Chairman: Yes, it is.

Mr. Harding: I would like to return to this National Energy grid again. I am very interested in it. I understand that one of the difficulties in establishing this has been the lack of co-operation from the provinces.

Mr. Briggs: I would not like to leave that impression, Mr. Harding, because the provinces have co-operated very well, indeed, in those studies. However, when a federal agency moves into their field, it becomes quite a different consideration. There are one or two basic considerations, Mr. Chairman, that might possibly be helpful.

• 1140

I do not doubt, for one moment, that there will eventually be a system of electric power transmission across the whole of Canada. The matter of importance though, is when this will arrive both properly and economically. There is no point—in our humble opinion, sir—in our, or Canada's or anyone's spending \$500,000 to save \$50,000. I am just using these figures as an example. I am not in any sense relating them to costs, and so on. Personally I would not see that a Trans-Canada grid from British Columbia to Newfoundland today would anything like pay for itself, but parts of that grid might well be justified now.

Another basic consideration here, sir, is that when one views energy matters in broad perspective and then turns to the subject of electric power and the production of electric power, the considerations are perhaps quite different from those which may apply to oil and oil supplies and reserves and are quite different from the considerations that will apply to gas, natural gas supplies and reserves, and so on.

It is becoming more and more the case that electric power, *per se*, is a commodity, in the ordinary sense of the term, in which no foreseeable shortage is ever likely to exist in the future. This is so from the point of view of the trend in the cost of electric power production. For example consider the discovered reserves of uranium. The main reserves in Canada today are sufficient to supply the electric power needs of this country, for I could not guess how many years in the future. Yet the prospectors and geologists are busy discovering new uranium supplies all the time.

Furthermore, the cost of production of electric power from uranium is being mastered very thoroughly, and the cost of each kilowatt hour—not the capital cost of the plants, but the incremental cost of each kilowatt hour—of energy from uranium is now foreseen in the Canadian system to be as low as six-tenths of one mill a kilowatt hour for the fuel cost. That is for the fuel cost alone, not the capital cost of the plant.

No shortage of electric power can be foreseen, by any stretch of the imagination, except in localities where special circumstances exist. Therefore, electric energy is being looked on more and more simply as a commodity to be supplied in the manner best suited at the time.

• 1145

This point of view makes it become difficult to adopt an attitude of developing, for example, small water or hydro resources just because they are hydro resources. Those hydro resources may well produce electric energy that is considerably more costly than are the power sources that are in store for Canada in the future.

Those are general observations, but they may help you in your deliberations.

Mr. Harding: Mr. Chairman, I am a little disturbed. Over a period of years we have had a great deal of talk about a national energy grid. To my mind, there are many sections of Canada where power is desperately needed, and where industry could, and I think would, be set up if power were available.

To my way of thinking, unless we have a national energy grid fairly soon these opportunities are just going to pass us by. It seems to me that too much emphasis is put on the easy way of getting rid of power. I understand the economics of selling every kilowatt hour you can, but apparently our north-south and east-west tie-ins are gradually being shoved to the side. I am quite apprehensive about it.

I have another question...

Dr. Howland: Mr. Harding, may I interrupt for a moment? I think it is true to say, Mr. Briggs, that there has been a fairly considerable development in the strengthening of ties between provinces in the last few years. Is that not correct?

Mr. Briggs: This is true to a considerable extent, and this is one of the areas in which we are vitally interested. This is what I intended to convey when I said we are conducting studies ourselves. I am sure you will see considerable strengthening of these power links between the provinces. Some of them, particularly in western Canada, are quite costly.

Mr. Harding: Have you any plans afoot for really pushing this national grid? For example, have you sat down with B.C. Hydro and suggested that perhaps some of this enormous amount of power that we are talking of exporting to the United States could come east? And the same applies to the other provinces, too. Have negotiations been carried on between the provinces and the federal government with the hope of pushing this thing?

I can recall several years ago when the talk all over British Columbia and everywhere, was that this national grid was going to be set up; that it was just a matter of time until we tied in with Alberta and came right across the prairies; and that industries were going to spring up based on this national grid. Gradually, it seems to me, the emphasis has been taken off that.

Dr. Howland: Mr. Briggs can supplement me, or correct me, on this, but I think the answer to this is that the studies have indicated the desirability of what you say. It is the problem of timing in relation to the cost involved. If we proceed step by step with this program in that direction, we are proceeding in the right direction and doing the right thing. It is really a matter of whether or not one should take this as a program, regardless of cost.

I think the judgment so far has been that we should move in this direction of strengthening in every way we can the ties between the provinces. The ties which are developing in the Maritimes, for example, are quite significant. They are in the right direction. Aid has been given to the Atlantic area to foster this.

• 1150

The costs involved in other areas are rather exorbitant, but if we can move from the practical to the progressively practical, we will be achieving what you rightly think is a good program. But it would be a very costly program to do it just because we want to do it. It is really not too practicable.

Is that a fair answer, Mr. Briggs?

Mr. Briggs: That is a fair answer, Mr. Chairman. Perhaps to answer Mr. Harding's question I could give an example of what has been going on and what is currently being accomplished. Would this be helpful to you, Mr. Harding?

Mr. Harding: Yes, I would appreciate it very much.

Mr. Briggs: We will start, if you will, in the Maritimes—Nova Scotia and New Brunswick. There are three utilities: two in Nova Scotia and a major one in New Brunswick. They are now solidly tied together over two high voltage lines. They are studying and planning additional lines, and have formed what we call the Maritime Power Pool; studies of future power developments are con-

ducted by these pool members as a unit. They are planning two distinct advances right now which are close to fruition. One of these is the connection of Nova Scotia and New Brunswick with the Quebec system. A strong connection with the Quebec system is approaching finalization. I am not sure if the decision has already been reached.

As far as Quebec and Ontario are concerned, it was announced some time ago in the papers that Ontario would be taking substantial quantities of power over a short number of years from Quebec, from the surplus that there will be from the Churchill Falls plant. This would necessitate the setting up of transmission connections between Quebec and Ontario.

The next point is this. Western Ontario or what Ontario Hydro calls the north-western region of Ontario, which is from the northern tip of the most northerly bulge of Lake Superior to the Manitoba boundary, has previously been a separate power system of the Ontario Hydro. By 1970, there will be two 230,000 volt lines constructed between that most westerly part of Ontario and Eastern Ontario. This gets our grid to western Ontario.

Ontario Hydro has contracted for certain amounts of power from the Manitoba Hydro, Kettle Rapids plant on the Nelson River. The deliveries of that Manitoba power will start early in the nineteen-seventies; that will necessitate a heavy connection between western Ontario and Manitoba.

Manitoba has already reached agreements with Saskatchewan for some interchange of power and these connections either exist today or are being developed, to link Saskat-

• 1155

chewan and Manitoba. Therefore, we have this connection virtually in sight up to mid-Saskatchewan. There is a bit of a gap in there because of the wide reach across the Prairies; I am not aware of any definite plans at the moment about bridging that, nor am I able to advise you about the discussions which probably went on between B.C. and the Alberta utilities. Outside of that you will see that the industry, with our very definite and strong encouragement, has undoubtedly achieved a great deal along the lines of what you are suggesting this morning.

Mr. Harding, I cannot avoid saying to these members that if they have not seen the beauty of the lakes, mountains and forests that are around Silverton, they must go to see them.

Mr. Harding: Mr. Chairman, I have several other questions, but some of the other members might wish to...

The Chairman: Gentlemen, in any event we must have another meeting on this vote 80 with National Energy Board. It is now 12

o'clock. Mr. Morison had a question. However, he had to leave early; therefore, I think we might as well adjourn at this time. We will complete Vote 80 at the call of the Chair. Thank you for being with us this morning, gentlemen. Meeting adjourned.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

ON

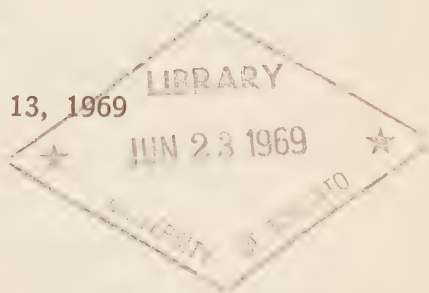
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 23

TUESDAY, MAY 13, 1969



Respecting

Main Estimates (1969-70) of Atomic Energy of Canada Limited.

WITNESSES:

(See Minutes of Proceedings)

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen
and Messrs.

Aiken
Beaudoin
Chappell
Code
Comeau
Deakon
Gilbert

Harding
Lind
Mahoney
Marchand (*Kamloops-
Cariboo*)
Moores (*Bonavista-
Trinity-Conception*)

Morison
Orange
Paproski
Ritchie
Roy (*Timmins*)
Whiting—20.

(Quorum—11)

R. V. Virr,
Clerk of the Committee.

Pursuant to S.O. 65(4) (b).

¹Replaced Mr. Anderson on May 13, 1969.

[Text]

MINUTES OF PROCEEDINGS

TUESDAY, May 13, 1969.
(23)

The Standing Committee on National Resources and Public Works met this day at 8.25 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Chappell, Code, Deakon, Gilbert, Harding, Hopkins, Lind, Marchand (*Kamloops-Cariboo*), Orange, Paproski, Ritchie, Roy (*Timmins*), Whiting—(13).

Also present: Messrs. Alkenbrack, Foster, Peters and Scott, Members of Parliament.

Witnesses: From Atomic Energy of Canada Limited: Mr. J. L. Gray, President; Mr. D. Watson, Vice-president—Administration; and Mr. G. H. Sprague, Treasurer.

The Chairman read the minutes of the latest Sub-committee report as follows:

WEDNESDAY, April 30, 1969.

The Subcommittee on Agenda and Procedure met this day at 3.30 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Comeau, Deakon, Harding, Hopkins and Orange.

The Chairman announced that because of the Air Canada strike, the Calgary trip had been cancelled.

The following schedule was approved by the Sub-committee:

May 13—Atomic Energy of Canada Estimates;

May 15—Vote 1. Public Works with Minister;

May 22—Visit—Inland Waters Branch at Burlington;

May 27—Vote 1. Energy Mines and Resources Minister.

At 3.50 p.m., the meeting adjourned.

On motion of Mr. Harding, the Report was concurred in.

The Committee had for consideration the Estimates of Atomic Energy of Canada Limited.

The Chairman read a letter from Honourable Otto E. Lang, Acting Minister of Energy Mines and Resources, requesting that the words "Canadian produced" be deleted from Vote L20.

The Chairman introduced the President of Atomic Energy of Canada Limited Mr. J. L. Gray, who in turn, introduced his officials.

Mr. Gray made an opening statement, following which, assisted by his officials, he responded to questions.

Votes 65 and 70 were carried.

Vote L15 was carried.

Vote L20 was carried and it was agreed that a recommendation would be made to the House to delete therefrom the words "Canadian produced".

Votes L25 and L30 were carried.

There being no further questions the Chairman thanked the officials and the Committee adjourned at 10.05 p.m. to the call of the Chair.

R. V. Virr,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, May 13, 1969

• 2023

The Chairman: Gentlemen, I will call the meeting to order if you are willing to proceed. We do not yet have a quorum, but as soon as we have a quorum we will ask that the Minutes already on record be printed; is this agreeable to everybody?

Some hon. Members: Agreed.

The Chairman: First of all, I would like to read to you the Minutes of the last meeting your subcommittee held on April 30.

(See Minutes of Proceedings)

The Chairman: Would someone move that this report be adopted as amended?

• 2025

Mr. Harding: I so move.

Motion agreed to.

The Chairman: Tonight we have with us Mr. Gray, President of Atomic Energy of Canada Limited and his officials. In calling Votes 65, 70, L15, L20, L25 and L30 relating to Atomic Energy of Canada Limited, Research Program, I think first of all I should put a letter on record that I received from the Minister of Energy, Mines and Resources because there are two words recommended for deletion in Vote L20.

1969-70 Estimates for

Atomic Energy of Canada Limited

Dear Mr. Hopkins,

The 1969-70 Estimates for Atomic Energy of Canada Limited include Vote L20 which reads...

"Vote L20—Loans to Atomic Energy of Canada Limited in the current and subsequent fiscal years, in such amounts and on such terms and conditions as the Governor in Council may approve, to finance the purchase of Canadian-produced heavy water for resale to Canadian and foreign users..."

Due to delays in obtaining production from the Glace Bay plant of Deuterium

of Canada Limited, it will be necessary to purchase heavy water from the United States and in order that funds from Vote L20 will be available for this purpose the two words "Canadian-produced" should be deleted.

Would you kindly record a request for this revision on the Committee's agenda, in order that the revised Vote wording will be included in the 1969-70 Estimates approved by Parliament.

Yours sincerely,

It is signed by Otto Lang, Minister of Energy, Mines and Resources.

To begin our meeting, I will call upon Mr. Gray to introduce his two officials. In doing so, I welcome all three of them to our meeting this evening. Mr. Gray?

Mr. J. L. Gray (President, Atomic Energy of Canada Limited): Just before you begin, you spoke of Vote 65 and Vote 70. Are we not on Vote 20? I do not mind if we pass somebody else's votes but I would like to get ours passed too.

The Chairman: We are going by the Blue Book in which the votes are not the same as the ones recorded in there. We hope that in another year we will have one book to go by instead of two.

Mr. Harding: Mr. Chairman, you say the numbers are not the same.

The Chairman: No, in the Blue Book the numbers are different from those appearing in these books that you received from the various departments.

Mr. Deakon: Why should the vote not be the same, Mr. Chairman?

The Chairman: I have not been Chairman of this Committee very long, Mr. Deakon, but I have wondered the same thing.

Mr. Orange: Mr. Chairman, if I might try to put in a word of explanation here, it is my understanding with the change in accounting procedures the government is implementing, ultimately we will go to this book as our

source of reference exclusively. The estimates have been prepared in two forms this year;

• 2030

one according to the blue book, and the second according to the way this is set up here, and that is why there is this little bit of confusion which probably should not go on beyond this year. They have been put together both by program and in the old form which has been traditional in government estimates since the beginning.

Mr. Harding: Mr. Chairman, are we dealing with the 5 votes on page 36 of the white book? This is what I understand.

The Chairman: Right.

Mr. Harding: As long as we know where we are going.

The Chairman: The reference that has been given to us by the House of Commons has been taken from the Blue Book. I have them listed here so those are the ones that we must go by. Mr. Gray.

Mr. J. L. Gray (President, Atomic Energy of Canada Limited): I am J. L. Gray, the President of AECL; on my right is Mr. Donald Watson who is Vice-President in charge of Administration; on his right Mr. G. H. Sprague, the Treasurer of Atomic Energy of Canada Limited.

I think if I may, Mr. Chairman, I would like to make a fairly brief statement that might help the discussion later in reviewing the estimates. I think copies have been made available.

CANADIAN NATURAL URANIUM HEAVY WATER POWER REACTORS
IN OPERATION, UNDER CONSTRUCTION OR COMMITTED

Utility	Type	Power MWe Net	Name or Location	Nuclear Design Engineers	Date of First Power	
Ontario Hydro	BHW	22	NPD Rolphoton	AECL & CGE	June	1962
Ontario Hydro	PHW	208	Douglas Point	AECL	January	1967
Karachi Electric Supply Corp.	PHW	125	KANUPP	CGE		1970
W. Pakistan			RAPP I	AECL		1970
DAE India			Pickering I	AECL		1971
DAE India	PHW	203	Gentilly	AECL		1971
Ontario Hydro	PHW	508	Pickering II	AECL		1961
Hydro-Quebec	BLW	250	Pickering III	AECL		1972
Ontario Hydro	PHW	508	RAPP II	AECL		1973
Ontario Hydro	PHW	508	Pickering IV	AECL		1973
DAE India	PHW	203	Bruce I	AECL		1975
Ontario Hydro	PHW	508	Bruce II	AECL		1976
Ontario Hydro	PHW	750	Bruce III	AECL		1977
Ontario Hydro	PHW	750	Bruce IV	AECL		1978
Ontario Hydro	PHW	750				
Total		6043 MWe				
	AECL		Atomic Energy of Canada Limited			
	CGE		Canadian General Electric Company Limited			
	HEPC		Hydro Electric Power Commission of Ontario (Ontario Hydro)			
	DAE		Department of Atomic Energy, India			
	NPD		Nuclear Power Demonstration			
	RAPP		Rajasthan Atomic Power Project			
	KANUPP		Karachi Nuclear Power Project			
Types:	PHW		Pressurized Heavy Water coolant			
	BHW		Boiling Heavy Water coolant			
	BLW		Boiling Light Water coolant			

Even though AECL appeared before your Committee only about six months ago, much has happened in this relatively short period of time. I would therefore like to review recent highlights in the nuclear power program in Canada and then make some observations on research and development, marketing, and organizational changes. With this background I feel you will then be better able to evaluate our 1969-70 estimates.

Nuclear Power Program

The most important event that has occurred in AECL's field of activity since we last appeared before your Committee was the decision made by Ontario Hydro last December to build a three million kilowatt nuclear power station in Bruce County on the shore of Lake Huron. It is to consist of 4 units each having a capacity of 750 thousand kilowatts. It will be the second largest nuclear power station to be committed anywhere in the world. Its estimated cost in 1968 dollars is \$760 million. Ontario Hydro will own, build and operate the plant, but the nuclear portion of it will be designed by AECL as a consultant to Ontario Hydro.

Coming at a time when a number of countries in the world are at the point of choosing a nuclear reactor system, this very important major development will serve to emphasize the intrinsic features of the Canadian system. With the two million kilowatts nuclear plant under construction at Pickering, Ontario Hydro has committed itself to over five million kilowatts of nuclear power. We have attached a table listing the Canadian natural uranium heavy water power reactors that are in operation, under construction or have been committed.

I will not spend too much time on the table. I would just like to point out that all of these plants are fuelled with natural uranium and all are moderated with heavy water. Under the column "Type" there are three types, and this is the type of coolant which is in them: first, is BHW, that is Boiling Heavy Water, meaning it is cooled with heavy water in a boiling mode; second, is PHW, that is Pressurized Heavy Water and that you will see is the most common type, the water in the coolant channels does not boil; third is the BLW, that is Boiling Light Water which is ordinary water, and that is the plant we are building in Quebec.

• 2035

If you wish to ask questions on this table I think it would be better to handle it that way because I will be touching on some of these as I go through.

At the same time that Ontario Hydro announced the Bruce generating station, AECL announced it would build a heavy water production plant at the same location. The first plan was for a 400-ton-a-year plant but it was boosted to 800 tons a year when it became apparent it would be necessary to commit additional production capacity to meet the demands of the Canadian nuclear power program and the foreign heavy water requirements that were in prospect.

The heavy water production plant is to be operated by Ontario Hydro. The complex comprising the present Douglas Point nuclear power station, the new three million kilowatt power station and the heavy water production plant will be known as the Bruce Nuclear Establishment.

Nuclear Power Demonstration

Canada's first nuclear power station, named NPD for Nuclear Power Demonstration, has an output of 22,000 kilowatts. It is the first one on the list. It went into operation in the middle of 1962 and after some commissioning difficulties has been very successful.

During 1968 it was shut down for three months in order to convert it from a pressurized heavy water coolant to a boiling heavy water coolant. The objects of the conversion are to gain experience with a multi-channel boiling system and to determine the control and stability of such a system. NPD in its new form went back into operation on January 2, 1969, and in spite of the use of new equipment, the station operated at a remarkable 86.8 per cent capacity factor for the first 3 months of its demonstration run.

Douglas Point

The Douglas Point nuclear power station was officially declared "in service" on 26 December 1968 and by February 1969 it had produced more than 1 billion kilowatt hours of electricity. The only major component remaining to be commissioned is the on-power fuelling system.

At the beginning of March we had mechanical difficulty with the fuelling machine which caused it to be locked on the reactor and it could not be unlocked. The reason for this was a mechanical design error

that had not been corrected. Since there were to be several weeks of re-design and part replacement, the station was shut down for its planned maintenance program which included the overhaul of the turbo generator about a month prior to the planned schedule. The work on the fuelling machine is being done at the same time as this planned maintenance work on the turbo generator.

Pickering

The Construction by Ontario Hydro of the four-unit, two million kilowatt Pickering station is well under way. We are responsible for the design of the station's nuclear steam supply system and the central control system. Civil construction of the reactor and turbine buildings of Units 1 and 2 is virtually complete. The building for 3 is well advanced and the building for 4 is just appearing above ground. Elsewhere at the site, the vacuum building is nearly complete, and the administration building and the service areas are in a similar state of construction.

At AECL Power Projects, which is our group in Toronto, the engineering design for Pickering has passed its peak. It is about 70 per cent complete and most of the major equipment within AECL's design responsibility has been ordered. Emphasis is now shifting to the follow-up work with manufacturers and with Ontario Hydro.

A prolonged construction strike at Pickering during 1967 and some equipment delays have led to a review of the schedule early in 1968. Progress since then indicates that it should be possible to maintain the new schedules which call for the reactors of Units 1 and 2 to reach criticality in 1971, and Units 3 and 4 in 1972 and 1973.

Gentilly

Gentilly nuclear power station, on the south shore of the St. Lawrence about halfway between Montreal and Quebec City, is being designed and built by AECL with the co-operation of the Quebec Hydro-Electric Commission, which will operate the station and eventually purchase it. The plant will produce 250 thousand kilowatts of electricity when it goes into operation in 1971. The reactor, known as CANDU-BLW, will be fuelled with natural uranium, moderated by heavy water, and cooled by boiling light water.

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The designs of the nuclear and conventional parts of the plant are nearly finished. The

nuclear design has been done by AECL and the conventional by Surveyer, Nenniger and Chênevert Incorporated in collaboration with Montreal Engineering Company Limited. The CANDU-BLW engineering effort is now directed mainly toward follow-up of manufacture, development and installation of the main components and systems.

Site work has progressed well during the last year with a manpower peak of about 750 being reached in the summer of 1968.

More than 1,000 orders for equipment were placed in 1968-69, bringing costs and commitments for the project up to 90 per cent of the total. Late delivery of some equipment items has adversely affected some phases of the construction program.

RAPP

India's first CANDU-type power station is now at an advanced stage of construction and a 23-man commissioning team is at AECL Power Projects preparing to go to the site in January 1970. The commissioning team is being supplied by Ontario Hydro under an agreement with AECL.

The Rajasthan Atomic Power Project is a two-unit station being built by the Indian Department of Atomic Energy. Montreal Engineering Company Limited is the consultant for the conventional part of the station and AECL is designing the nuclear part.

The Canadian-made equipment for Unit 1 has been shipped, with the exception of the fuelling machines. The Canadian-made half of the first fuel charge is now at the site and the fabrication equipment supplied by Canada for the manufacture of the Indian half of fuel has been commissioned at the Bhabha Atomic Research Centre near Bombay.

For the Pakistan project six AECL employees have been lent to Canadian General Electric Company Limited to assist in the commissioning and initial operation of KANUPP, the nuclear power station CGE is building in Pakistan. It is expected the group will be posted to Karachi in November 1969 after training at NPD and Douglas Point.

The Karachi Nuclear Power Project is a 125,000 kilowatt heavy water natural uranium plant cooled with pressurized heavy water being built by CGE on a turnkey basis for the Pakistan Atomic Energy Commission. It is located about 15 miles from Karachi and is scheduled for completion late in 1970. Building construction is nearly finished and major equipment is currently being installed.

The commitment of the Bruce generating station and heavy water plant and the assumption of a marketing role by AECL have resulted in additional responsibilities for our Power Projects group. To meet this growth, the group was reorganized early in 1969. The salient features of this reorganization was a consolidation of the design and projects groups at Sheridan Park near Toronto, under a general manager of engineering.

In addition to design and management responsibilities associated with the Bruce Nuclear Establishment, Power Projects is designing the nuclear portions of the Gentilly and Pickering stations in Canada and the Rajasthan station in India.

On behalf of the federal government, AECL is managing the design and construction of the Nelson River transmission line and this is an additional responsibility of Power Projects. A small office is located in Winnipeg for this purpose.

At our last meeting I mentioned the agreements that had been entered into between the Canadian General Electric Company Limited and AECL for the merger of the GGE nuclear power systems engineering group. This merger became effective on 1 July, 1968. The main effort of this team that is now known as AECL Power Projects, Peterborough Division—has been directed in support of nuclear power marketing in the export field. Basic design of CANDU nuclear steam supply systems for 300,000 and 600,000 kilowatt nuclear power plants was completed for inclusion in tenders to Romania, and technical description were prepared for submission to several other countries.

Earlier this month several of you visited our Chalk River Nuclear Laboratories and I am sure that for those who went, what was seen and explained at Chalk River will have had far more impact than anything I might try to tell you here. The words "research and development" can cover a wide scale of activities and it is hard to put adequate descriptive words to the type of work that is being done at Chalk River. In the applied area, our laboratories, not only at Chalk River, but at Whiteshell and Sheridan Park, are concerned mainly with nuclear power.

The work may be put loosely under two classifications, current and future. Current has to do with the present line of power reactors and entails finding the solutions to problems—trouble-shooting—and improvements that can be effected without undue de-

lay or expense. In the future category is work on advanced nuclear power systems—systems that will produce more power at less cost per invested dollar. This work covers a wide

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range of research and development, in such fields as fuel, materials, heat transfer, thermodynamics, chemical engineering and others. It is really a continuation of what AECL has been doing all along and it is of prime importance, first because of the ultimate economic benefits it promises to yield, and second because it is essential to the progress and growth of the nuclear enterprise in Canada.

I reported to you last November that AECL was planning to bid on two nuclear power plants, one in Romania and the other in Italy. The Romanians were offered a firm price bid for a 300,000 kilowatt plant, and as well, a technical description of a 600,000-kilowatt unit. Their decision is overdue, but the delay is easy to understand, for they want to incorporate in the same program the construction of a uranium refinery, a fuel fabrication plant and a heavy water production plant. This is a very ambitious plan, by anyone's standards, and I am not surprised that they are taking their time in coming to a decision. Discussions were reopened on 3rd May, but I would expect negotiations to continue for some weeks before any decisions are taken by either party.

The date for the submission of bids on the plant in Italy has been postponed to later this year; we are however actively working on methods of bid submission. Meanwhile, we have been pursuing contacts in other countries that have indicated an interest in the Canadian nuclear power system. Among these are Australia, Brazil, Czechoslovakia, Mexico, New Zealand, Turkey and Yugoslavia.

Some of these countries have said they plan to commit nuclear plants in 1969. Others are thinking in terms of 1970 or a year or two thereafter. All prospective clients insist on a guaranteed supply of heavy water for the initial installation at least.

We have offered to supply to the Republic of China a research reactor of the NRX type similar to that supplied to India some years ago. The officials in Taiwan are considering the offer and negotiations are active but a decision will not be reached before July.

Still in the international sphere, I should mention a commercial agreement reached in

January whereby AECL agreed to supply the Power Reactor and Nuclear Fuel Development Corporation of Japan with "packages" of technical information on aspects of the Canadian nuclear power system. This was a straight sale of "know-how" for which AECL received approximately \$500,000. Since the first of April we have supplied an additional package valued at over \$300,000.

In the management side of AECL, although there is a continual movement of personnel and responsibilities in an organization such as ours, there have been some shifts in the management of the Chalk River Nuclear Laboratories that are worthy of note. Prior to January 1st there was a division of responsibility at Chalk River between Dr. W.B. Lewis, Senior Vice-President (Science), and L.R. Haywood, Vice-President, CRNL. Effective the first of the year, Dr. Lewis has assumed a staff position, under the same title, on the Head Office organization. Relieved of routine administrative responsibilities, he thus is able to concentrate more fully on the science programs of all AECL sites and on the advanced studies in which he has had a direct and active interest. The research divisions at Chalk River that formerly came under Dr. Lewis have been transferred to Mr. Haywood, so the latter now is responsible for the management of all AECL operations at this site.

Getting to the estimates, you will note that the \$69 million proposed for AECL for 1969-70 is just \$400,000 more than was approved for 1968-69. I think it would be fair to call this an austerity budget, for an increase of slightly under 0.6 per cent is not sufficient to cover the cost of escalation of salaries and wages, and materials and supplies.

In planning our 1969-70 program within the proposed \$69 million budget, we have managed to avoid the outright cancellation of projects and the laying off of personnel. What we have done is stretch out some projects, and thereby reduce their current cost, and cut back on equipment orders and capital expenditures. Also, the budget for research and development contracts with industry, which we had hoped to increase substantially, instead has had to be reduced.

Thank you, Mr. Chairman.

The Chairman: Thank you, Mr. Gray. I am now prepared to accept questions on these estimates. Mr. Harding?

Mr. Harding: —Mr. Chairman, I have several questions for Mr. Gray on the cost of nuclear power. Rather than go through his presentation, I have prepared a few ques-

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tions, some of which relate to material we received during our visit to Chalk River. I would like to check with the Commission to find out whether their thinking is along the lines of some of the information we received.

When we last met, which was last fall, we were discussing costs and we had made some comparisons between the nuclear cost and the fuel-fired cost in Ontario. I believe at that time the indication was that the coal-fired plants were also having a reduction in the over-all cost per kilowatt hour.

My first question to Mr. Gray is: Harding how do these new plants which you have just told us about tonight compare in cost per kilowatt hour with the coal-fired plants which they currently have in Ontario?

Mr. J. L. Gray: We understand that they would be quite competitive economically. This is a decision that is being made by Ontario Hydro, that is, from Pickering II on the decision is entirely one of the utility. They are very hard-headed on cost, and they are satisfied that the cost from the Pickering unit and more particularly the cost from the Bruce units, the big units, will be lower than the cost of any other source of energy available to Ontario—any other being coal, oil or gas because their hydraulic is too far removed. Coal from the United States is the cheapest other form of energy. So what we are really comparing the nuclear plants to in Ontario is imported American coal.

When Pickering was started about four years ago, the estimates Ontario Hydro had for an equivalent coal-fired station located on Lake Ontario was about four mills per kilowatt hour using American coal. It appeared from our estimates that Pickering units at the same time would be slightly under that, 3.8 mills per kilowatt hour, using Ontario Hydro's estimates, Ontario Hydro's method of calculating cost, using their normal depreciation, and so on.

Actually the Pickering costs are rising. Things are escalating up. There was the delay of a year because of a strike. We do not know yet, but I suspect we will have a hard time meeting four mills. We will not be much over it. In the meantime the coal-fired units are rising too. They came down a lot as a result of competition with nuclear, but they are now

starting to rise a bit. I would say that the Pickering units will be about equal with coal-fired units in Ontario, and the Bruce units will be considerably better.

Mr. Harding: Have you an estimated price on the Bruce units?

Mr. Gray: The unit energy costs—I do not know that we published any, but it is about 3.7 mills. I would rather this came from Ontario Hydro than from us, but it really depends on the final capital cost and what it is costing them for money. This is the main problem with the Canadian-type nuclear power station, which is fairly capital intensive. When we started this whole nuclear program, something like 4 per cent money was available to Ontario Hydro as a long-term borrowing rate and we were in very good shape. But the 4 per cent money seems to have disappeared, and this puts an added burden on a nuclear plant which costs two or three times as much to build as a coal-fired plant, but costs several times less to fuel.

Mr. Harding: Mr. Chairman, I would like to ask a question in connection with pollution. It is my understanding that a coal-fired plant will create a great deal of pollution through the combustion that takes place when the coal

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is being utilized. What comparison is there between the nuclear plants and the coal-fired plants in this respect?

Mr. Gray: They are quite different from a pollution point of view. They are getting the coal-fired plants cleaned up pretty well now, but it is very difficult to take out the SO_2 . There is sulphur in coal, and when it burns it goes into SO_2 , and it goes up the stack. It is a pollutant that has some harmful effects if it is in any concentration.

In addition, they now scrub out most of the fire fly-ash. You do not very often see black smoke coming out of a stack near a power station. Occasionally there is some when they start up, but it is only because the equipment is not working well. They have put in a great deal of equipment to take out the fly ash to keep the stack effluent appearing clean. But there is that pollutant that comes into the atmosphere from a coal-fired or an oil-fired power station. That does not exist in a reactor. There is no air required for combustion to carry it on. In a reactor it all takes place inside a sealed chamber, and the heat does not require a combustion material like oxy-

gen in the air. The stack we have is only there to take away the ventilation around the plant. In a normal operation or even abnormal operation there is no pollutant of that kind.

On the other side, you will hear—perhaps you are going to ask this question—of the temperature pollution of lakes and rivers, that is, raising the temperature of the water. It is the same for both plants. Both plants use turbines that have to have condensers to operate, and the condensers are cooled by river water or lake water. One is as bad as or as good as the other. In some locations you will get what they call thermal pollution in a river, for instance, from either a coal-fired plant or a nuclear plant, to virtually the same extent. The ones located on Lake Huron produce no noticeable effect on the temperature of the lake. The evaporation rate is so much more and the energy from the sun is so much more than anything we put into a lake like Lake Huron that it is immeasurable.

Mr. Harding: Mr. Chairman, there are some other questions I would like to ask. Really this is research, and I believe it would come under—you have a research and development reactor. Do I understand that you have been experimenting with an organic liquid cooling?

Mr. Gray: Yes, we have.

Mr. Harding: Has this been given up?

Mr. Gray: No, it has not been given up. We have an organic cooled reactor. It is too bad you do not have a chance to go to Whiteshell near Winnipeg. We are very, very proud of this reactor and it has been one of our most successful experimental facilities in all the years we have operated.

When we decided to build the boiling light water reactor at Gentilly in Quebec, we really searched our souls as to whether that should be a boiling light water reactor or an organic cooled reactor. In all of our assessments they came out just about equal, from the point of view of unit energy cost. But some of us—I do not know which side of the fence I was on—felt that it would be nicer to have a water coolant that we were all accustomed to, not a heavy water coolant but an ordinary light water coolant, rather than organic material with which we were not very familiar. So a decision was made to build the boiling light water prototype plant, and just carry on with the research reactor, WR-1, the organic type.

Now it has run for three or four years, and it has been so successful that there are some people within AECL who now feel that we should have built an organic cooled reactor. Nobody feels, I do not think, that we should not have built the boiling light water plan, but the pressure is now on to build a prototype organic cooled reactor, and if we were not in the sort of budget fix we are in these days, we would be coming to the government about now looking for money to propose an organic cool reactor. It looks very good, but we simply do not have the money to put this forward at this time.

Mr. Harding: There are another couple of questions I would like to ask. I think this is

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one of the most interesting pieces of information I obtained on our trip to Chalk River, so I hope that I did not get it wrong. I understood from Dr. Lewis that this could mean a real breakthrough in costs, as far as kilowatt hours are concerned. In some of the notes which he supplied to the members he indicated or he felt, although the experiment had not been concluded, that perhaps by the 1980's we could reduce it to two mills or less. I understood it was this type of reactor that he was referring to. Have you any comments on that?

Mr. Gray: You understood Dr. Lewis correctly. He was talking about 1968 dollars, but this is 15 and 20 years away. It is complicated and is not quite that simple. He has worked out quite a complicated reactor. It combines not only organic cooling and thorium fueling, but also Uranium 235 fueling. He has produced a reactor which he has called a valubreeder. Dr. Lewis has been very successful in producing reactor systems over the years. I think some of our applied people at Chalk River, Douglas Point and Toronto feel that it is too much of a "paper" reactor, and that when you finally get down to working out all the problems, the estimated two mills will be hard to hang on to. Dr. Lewis is a very able man, he is one of the most able persons in the world in this field, so we must take this seriously.

This is a major program. It is not just building an organic cooled reactor. This is a program involving \$10 million, \$15 million or \$20 million dollars a year research for 10 or 15 years. His calculations show that in a large size, 1,000 megawatts or 1,500 megawatts, and with the right financing, the two mill power

is quite feasible. Additionally, it extends the energy reserves far into the future, because it burns thorium and uranium extremely well.

Mr. Harding: Just one more question, although I think my time is nearly up, Mr. Chairman. If additional money was given to you for research or allocated to your branch, would some of it go toward this type of work?

Mr. Gray: Very much so.

Mr. Harding: Would this be one of the first projects that you would put it into?

Mr. Gray: The first thing that we would like to do would be to put a little more money into industry. We were forced to cut down our research and development contracts in industry from \$7 million to \$6 million to \$5 million, to about \$4.5 million next year. I think if we had \$2 million or \$3 million or \$5 million more we would initially like to put \$1 million or \$2 million back into industry. Part of it would be working in this field.

Mr. Harding: I would like to add one more comment before I stop Mr. Chairman. I think if we could produce two mill power at a station in this country through nuclear generation, the amount of electricity which this country is now using and will be using in the future, would return us hundreds of millions of dollars every single year. It seems to me that projects of this type should be given all the encouragement in the world by this Committee and government. We cannot afford to let projects like this go by the board, because I think it is a matter of getting into the market first. Once these are set up, I presume, we would have markets for them in other countries.

Mr. Gray: Yes, if we could produce that sort of plant. As well, we will have markets for the plants which we now have. If we had that plant in our sales brochure, we could sell as many as we could produce.

Mr. Harding: Thank you.

The Chairman: Mr. Roy.

Mr. Roy (Timmins): Mr. Chairman, may I first be permitted to thank Mr. Gray for our visit to Chalk River. While we did not have the pleasure of his presence I want to give him the assurance that Mr. Haywood and Dr. Lewis and his staff looked after us very well and made us feel right at home.

I think it was said during our visit that AECL has five sites, or five work areas, dispersed through Canada. Is this right?

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Mr. Gray: Yes we have. They include the project you visited, which was the Chalk River Nuclear Laboratories, the Whiteshell Nuclear Establishment near Winnipeg which is a small version of Chalk River, and involves 750 people as compared to 2,400 at Chalk River. We have our Toronto division which is a Power Projects division mainly concerned with design with some development work. Actually, we have six, there is an off shoot of that at Peterborough where we have taken over the CGE group and made them a division of Power Projects.

We have our Commercial Products group at South March, which is just outside of Ottawa, and the head office which consists of the three of us and some staff.

Mr. Roy (Timmins): Mr. Gray, are there any particular reasons, why these sites are dispersed? Are there any advantages to this or is there any significance to the dispersal?

Mr. Gray: Yes, the Chalk River site was chosen during the war, in 1943, because of its' location, from a security and safety point of view. It was at the top end of the Petawawa military reserve and adjacent to a forestry reserve. It was chosen for just that reason. It was a secret establishment.

It has turned out to be an ideal location for projects like this where there is a lot of radioactivity. It has good disposal areas, as it has abundant sandy areas. Those are the reasons for Chalk River.

When we came to look for a second site, we actually looked from coast to coast, B.C. to Newfoundland, and did an evaluation of all the possible places we could think of. Manitoba came out on top and so we started looking for a site there. We had to go about 60 miles from Winnipeg in order to get a site that had enough acreage and remoteness so that we could have an establishment that would fulfill the requirements of the experiments which we do. It was separated in order to put some of this sort of work into Western Canada. It was a decision, and I think a correct one by the government and in which we participated.

We could have concentrated it at Chalk River, but we decided at that time that since Chalk River as about 2,400 or 2,500 people

and we had seen one or two other establishments around the world go downhill after they got to 5,000 people, we made a decision within AECL not to let it grow beyond about 2,500 in order to keep the plant healthy. That is why we went to another site.

The location of the Power Projects group in Toronto is entirely related to Ontario Hydro. That is the main customer. They located down there in 1958 in an Ontario Hydro building, the old Mamby service centre, to design reactors for Ontario Hydro and be near manufacturers. It is primarily because Ontario Hydro are the customers.

We are here because I have to spend most of my time with the government.

Mr. Roy (Timmins): In committees!

Mr. Gray: Commercial Products are here because it is a good location for that type of operation.

Mr. Roy (Timmins): There has been news about the tender which was lately presented to the Greek government for a nuclear reactor, and I think the successful tenderer was England. Are you aware of the terms of the tender and the difference or the significant deciding factors in these tenders? Why we did not get the...

Mr. Gray: We are only aware of what we have been told. Of course we are aware of what we put in. We put in a very quick tender. They asked for it in February and it had to be in by March 15. We have been advised from the embassy that the Utility in Athens was quite satisfied with our proposal. We understand the price and the bid were just as good as those of the British, but since we refused to buy \$65 million worth of tobacco the order went to England. Everything was quite open and was in the press. Our Ambassador has been told, very directly, that the work went to Britain because of the purchase of tobacco. It was not related to the price or the technical competence of either our team or of Canada's to supply.

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Mr. Roy (Timmins): Were both nuclear systems tendered on identical or similar bases or can you compare both systems generally for us?

Mr. Gray: They were both heavy water moderated but their system is what they call the steam generating heavy-water reactor, it

is an enriched fuel reactor, it is similar to the one we are building in Quebec, but it is a different reactor. It probably costs nearly the same amount to build and probably a little more to fuel than our type of plant.

On most of these bids to foreign countries, there are very few identical bids go in. Even the American bids are usually different. If say, Westinghouse and G.E. bid, the reactors are different. All you can do is put a team on evaluating the capital cost of the plant you could bid at a guaranteed price and then estimate what it is going to cost to operate that plant in your own utility and, in your own system of evaluating these things, decide what the unit energy costs are going to be and make a decision.

Mr. Roy (Timmins): Have you some tenders pending now awaiting approval or refusal?

Mr. Gray: In Rumania we put in a proposal that was valid until March 15—so it is no longer valid—for a 300-megawatt unit and a 600-megawatt technical description but it did not have a price on it. After we put the price in the Rumanians wanted us not only to put in a price on a 300 but on a 600-megawatt reactor, on a heavy-water production plant, a refinery, a fuel fabrication plant and to firm up industry to industry agreements for the manufacture of equipment in Rumania; for instance, between CGE and the Rumanian company or Vickers and the Rumanian company. We just said this was impractical. It was impractical to do all this in one package at any one time.

They wanted to make sure that their whole program was going to be buttoned up and clean. But first of all, if you add it all up it comes to something like \$190 million of loans that we would have to put into Rumania. It is more heavy water than we have and we just said that we cannot meet that. We told them what we thought they should do and we did not hear from them for three or four weeks. Some mails went astray and they finally telegraphed me to see why we had not replied. It happened to be over in Europe on May 3 so I met the officials of the Rumanian group in Vienna. They have changed their demands now and it looks as though we are mainly back on a wicket that we can play on. We wrote to them last week making a new proposal without any firm bid, but I would say that there was quite a good chance we can get a project in Rumania if we are prepared to take a big one. This is a matter that would be up to the government, how much

credit they are prepared to put forward to Rumania.

Mr. Roy (Timmins): Thank you very much, sir.

The Chairman: Mr. Alkenbrack.

Mr. Alkenbrack: My question is very brief, Mr. Chairman. I want to congratulate Mr. Gray on his report. I want to thank him for the hospitality at Chalk River the other day. We learned an awful lot about this industry and I want to commend you for the good position in the world of nuclear energy that you occupy.

The question I wanted to ask, Mr. Chairman, is that Mr. Gray will recall probably on August 21, 1963 I contacted him regarding a power plant in Lennox and, of course, at that time we were talking about a nuclear-powered plant but there was nothing certain about which type they would adopt. I have here a copy of the letter I wrote to him August 21, 1963 making the recommendation that the power plant be built in Lennox. On December 8, 1963, Ontario Hydro announced that one would be built there. Now my ques-

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tion is. I believe the plant is going to be coal-fired, and I have no quarrel with that whatsoever, but why is it not being nuclear-powered?

Mr. Gray: Again, Ontario Hydro are in a much better position to reply, but the main reason given to us by the chairman of Ontario Hydro is the amount of money available to build plants. The can build the million kilowatts that they want in coal-fired plants for about one-third of the amount of money they can in nuclear plants. So they decided to go ahead with a million coal-fired and three million nuclear. I think you will find another coal-fired plant built in Ontario if the money situation stays the same. It is purely a question of financing as I understand it.

Mr. Alkenbrack: I understand this new plant is to cost \$275 million. What is the yield per mill?

Mr. Gray: In the new plant in Lennox?

Mr. Alkenbrack: Yes.

Mr. Gray: I think it is around four mills per kilowatt hour. It depends upon the price of coal and the actual cost of the plant. It may be a little more than four mills.

Mr. Alkenbrack: Thank you.

The Chairman: Mr. Marchand.

Mr. Marchand (Kamloops-Cariboo): I have only a couple of brief questions, Mr. Chairman. I am not exactly certain what is meant in the first paragraph under the heading "Nuclear Power Program", in terms of money. Is this plant, this nuclear power station being built in Bruce County going to be financed completely by Ontario Hydro?

Mr. Gray: Financed completely by Ontario Hydro.

Mr. Marchand (Kamloops-Cariboo): I noticed some time ago in the press where the Russians have come up with a small nuclear-powered plant that they are going to distribute in some of their northern communities. Are we thinking in terms of this or are we doing any research in this area to see if we cannot come up with some similar types of plants, perhaps that might be usable in our northern areas?

Mr. Gray: We have done quite a large study in this area. First of all, we had a survey done by a consulting engineering firm of the size of the power units in Canada and in the world for northern use or for mining operations. Then we did quite a large study of three reactor types, the best ideas we could come up with. Unfortunately, it is too expensive. With the unit energy cost it is still really cheaper to use a diesel plant or 500 kilowatts than it is to use a nuclear plant. Using any nuclear designs that we would come up with, and we are knowledgeable in all the designs in the United States and to some extent in Russia, it is just not an economic proposition.

Mr. Marchand (Kamloops-Cariboo): What would be the cost of the Russian plant, say, compared to a unit of our plant?

Mr. Gray: I have no idea but I imagine it has been well up not in mills per kilowatt hour but in dollars per kilowatt hour—in unit energy costs.

Mr. Marchand (Kamloops-Cariboo): What were your comparative costs, as a matter of interest, say between...

Mr. Gray: They varied all over the lot because where we came up with 25 mills for a fairly large plant, for some place like Whitehorse would we get down to, perhaps, 25 mills per kilowatt hour. It depends on how you handle the unit capital cost, the cost per

kilowatt. Installed it is very, very high. In these plants we are not talking of \$250, it would be more like \$2,500 or \$5,000 per kilowatt installed. If you are really interested we could send you copies of the reports.

Mr. Marchand (Kamloops-Cariboo): I would not mind. I am sorry I missed the trip up to Chalk River, I really meant to go out. I do not know an awful lot about atomic energy power but I have an interest in it and I would like to learn more about it. I am sorry I missed the trip but I would be grateful if you would send them.

Mr. Gray: We will send them.

Mr. Marchand (Kamloops-Cariboo): It seems to me that atomic power is going to be one of the things for the future and we all are

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looking at atomic power, perhaps, for many, many reasons. If you look beyond the year 2000 with the consumption of our petroleum and all these types of things, our nonrenewable resources, and with the utilization of water power and, perhaps, the utilization of water in other ways—I have taken all of these factors into consideration and I think this is the real field. Are you going to continue research in this area and try to come up with some cheaper method that would . .

Mr. Gray: We are in nuclear power, but nuclear power and small units in the North do not come together. The nuclear power is good in very large units, at least 750,000 kilowatts which would probably cover the whole of northern Canada three or four times over in its requirements for power.

Nuclear energy is only good in small units when it is used in very small units like spacecraft. Then it is not a reactor, it is used as an energy source that emits energy for these spacecraft. This is all right, but it is quite a different form. It is not a nuclear reactor. You would not have seen this at Chalk River anyway, Mr. Chairman although they are knowledgeable in it. This work was mainly done at Whiteshell in Manitoba. If any of you are interested in small reactor work and can spend a day or two days there it would be well worth your while because the staff there are just as keen as you are to find a small reactor. This would really give them a new lease on life, but unfortunately it did not work out and we have shut down that work.

Mr. Marchand (Kamloops-Cariboo): Just to pursue this matter of a reactor used in a

spacecraft further, what kind of a reactor is it? What are they using as their source of energy?

Mr. Gray: They may use cobalt which emits continuous energy in gamma ray energy; they may use a neutron source to emit energy. In a cell this produces very low currents to operate radios or transmitters of this sort. It is not to heat them, although I guess they even use it as a heat source in some of them. There is a small reactor that you can buy produced by North American Aviation, I think, but it is not an economic proposition from the point of view of a northern community.

Mr. Marchand (Kamloops-Cariboo): Are you looking at this work in small nuclear reactors as a possibility of powering cars, for instance?

Mr. Gray: As far as we can see in anything we know now it is quite impractical. Even powering very large aircraft, which is being studied in one or two countries looks nearly impractical to us. It is a wonderful power source for a nuclear submarine but that is a pretty big energy source. The submarines are pretty large vessels. The beauty of the thing is that it does not require oxygen and they can submerge and stay down for a year if they want. It is a wonderful source for that sort of thing, but it has to be very large. There is talk, perhaps, of fitting a Canadian icebreaker with a nuclear reactor. When you get down to the economics of these sorts of things you find that where you are going to be coming into ports anyway that you can pick up oil. A nuclear submarine is perfect. It is an absolutely wonderful vessel. I think nuclear energy in effecting the production of a nuclear submarine for defence has done more for the world than other single thing that it has done.

Mr. Marchand (Kamloops-Cariboo): Thank you very much.

The Chairman: Mr. Gilbert.

Mr. Gilbert: Mr. Chairman, I would like to ask Mr. Gray whether we are importing heavy water into Canada to supply our nuclear power stations?

Mr. Gray: Are we?

Mr. Gilbert: Yes, are we?

Mr. Gray: Yes. We hoped we would not. We had a contract with Deuterium of Canada

Limited in Glace Bay to produce nearly 1,000 tons by now. They were to be in production of 200 tons a year in July 1966. They have not produced any yet and they are still some way from getting that plant into operation. In the meantime, we have gone ahead on committed power plants and we have had to purchase heavy water from the United States Atomic Energy Commission. We have committed to

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purchase and this is why we needed this vote changed. By June, we would like to pick up enough heavy water for the Indian plant, for the Pakistan plant, and for the Pickering plant. We are not going to use it; it is all being resold, but in order to finance it we need to have the vote changed.

Mr. Gilbert: What is the problem with regard to the deuterium plant in Nova Scotia?

Mr. Gray: I would rather you read the evidence in Nova Scotia than...

Mr. Gilbert: I would prefer it if you would summarize it for me. It is much easier.

Mr. Gray: It is a culmination of design problems related, I think, particularly to the use of salt water as a source of deuterium. Deuterium is in all water and the amount of deuterium may be 140 parts per million in this water. In salt water it is more like 157 parts per million and every part is quite important. When the designers built that plant they decided to use salt water as the source and they have run into some very severe corrosion problems that they might have been able to foresee. Anyway, they did not, and the plant has not functioned. The latest thing is the corrosion of all the heat exchangers and it will take some months to get new heat exchangers. It is a very complicated problem, if you read the evidence in Nova Scotia you will find this.

Mr. Gilbert: Is this a Crown corporation?

Mr. Gray: Industrial Estates, yes, it is a Crown corporation of the Province of Nova Scotia. We have nothing to do with it other than the purchase contract. We have been at arm's length, and I assure you at long arm's length with the Deuterium Corporation since the inception because of the patent problems. It is a very sad story because we really need heavy water and we are having to pay a lot more for it from the United States than the contract price from Deuterium.

Mr. Gilbert: Is the heavy water plant completed at Douglas Point?

Mr. Gray: No. They are just starting construction. Canadian General Electric Company is building another heavy water plant in Nova Scotia at Point Tupper and it is very near completion. It is a 400 tons a year plant. As nearly as we can tell it is on schedule, or nearly on schedule, and we expect it to be producing heavy water by the end of this year, within a month or so of the schedule. So we will be getting production by the end of the year or the beginning of next year.

Mr. Gilbert: With regard to that heavy water plant at Douglas Point will AECL be operating the plant, or will it be Ontario Hydro?

Mr. Gray: It is being operated by Ontario Hydro for us, using steam first from the Douglas Point plant and then steam from these large plants. That is why it is located there, the steam from these large plants is very low-cost steam.

Mr. Gilbert: Would you tell me what state your ING program is in, Intense Neutron Generator.

Mr. Gray: ING is pretty well dead and buried. It keeps coming to the surface every once in awhile. We do not have an ING project within AECL. We have salvaged three parts of the ING project and are continuing with them. The vote for ING was a separate vote, or a separate item in the estimates, and it was not approved; so we have no money in for ING now. We have the money in for a group of the staff. We have had to terminate all our contracts with industry and release a lot of people who were attached to Chalk River working on ING.

We are doing some work on an accelerator that we think might have some industrial application. We were doing some work on an injector which was part of the ING project and on a liquid metal coolant which was to be the target. Lead bismuth was to be the target that we were going to impinge with projectiles to cause neutrons to be formed. We think that work should continue because we may use it as a coolant in a reactor. There are three parts of ING, three little pieces of ING that are carrying on with that same group of people, but it is not ING.

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Mr. Gilbert: It is not ING.

Mr. Gray: It is not ING. It is nowhere near ING.

Mr. Gilbert: And I imagine you are disappointed about this?

Mr. Gray: Yes, there was a lot of enthusiasm, at Chalk River particularly. I personally do not think it would have been built at Chalk River, I think it would have been built near a university or a group of universities. This is where Dr. Lewis and I do not quite agree. He would like to see it built at Chalk River but I think it would have been better to build it somewhere else. But a large group of our very good staff would have been involved in its construction, operation and use.

Mr. Gilbert: Mr. Gray, on page 77 of the Estimates the details under the Chalk River Nuclear Laboratories show a total expense of \$39,754,000 for 1969-70. Do you see that at the bottom of the page?

Mr. Gray: Yes.

Mr. Gilbert: And then 1968-69, \$39,253,000. Then you deduct from that revenue of \$3,015,000 in 1969-70 compared to \$2,450,000 in 1968-69, which indicates a half million dollar difference on revenue and yet the costs are almost constant. Do you follow my point, Mr. Gray?

Mr. Gray: Yes. Revenues at Chalk River can vary all over the lot. For instance, the sale of a packet of information to Japan might bring in a quarter of a million or half a million dollars. That NRU reactor which you may have seen at Chalk River last year produced a million dollars worth of cobalt. Chalk River sells that to our commercial division, so it comes in as a revenue to Chalk River. This revenue item can vary.

Mr. Gilbert: It can vary. It has no relationship then?

Mr. Gray: Not really. Housing rental is a pretty stable thing; apartment rental is at a pretty stable level.

I am reminded that at NPD we own the reactor, Ontario Hydro own the turbo generator and we sell steam to Ontario Hydro. For instance, it was done for three months this past summer, in fact it was done longer than that with this changeover and yet we have to keep paying the staff. The sales here would be down but we saved some money on fuel. But the revenues at Chalk River vary all over the place.

Mr. Gilbert: I have just one short final question. Will the Hearn plant in Toronto,

which is right in my constituency, continue to operate after the Pickering plant is in full production?

Mr. Gray: I would think Hydro would keep the Hearn plant as a standby spinning reserve for a long, long time.

Mr. Gilbert: Well, I am disappointed to hear that because there is a white ash...

Mr. Gray: Are you down wind from it?

Mr. Gilbert: ...that comes out, falls on the property of my constituents and I bear the brunt of the criticism. I wish that your research department would really bear down on this white ash problem and straighten it out for myself and for my constituents.

I am sure that you will take note of that, Mr. Gray.

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Mr. Gray: Yes, I will certainly speak to the chief engineer of Hydro.

The Chairman: I would just like to say at this time that I hope Mr. Gray will continue to take all the good advice that Dr. Lewis has been offering him over the years, particularly with regard to Chalk River. Mr. Foster.

Mr. Foster: Mr. Gray, my question concerns the amount of uranium used in a plant such as Pickering that produces 2 million kilowatts of power. What is the amount per year that could be consumed by a plant like this?

Mr. Gray: I would think between 350 and 400 tons of uranium. That is U, not U_3O_8 —uranium metal. I am thinking of something like 90 tons per year per reactor.

Mr. Foster: So this would be four times that when going at top rate.

Mr. Gray: Yes.

Mr. Foster: How many tons will be utilized in Canada when all the plants that we have operating now come into full production?

Mr. Gray: Well, that is a major user. Douglas Point uses about 25 tons a year; the Gentilly plant will use maybe 30 to 35 tons a year. Those are the only two plants other than the Pickering plant at about 300 or 400 tons. Then there is the Bruce plant, which is about half as big again, and will use about 600 tons.

The quantity of uranium used in the Canadian type plant is quite low. It is a good

selling point from the reactor point of view but it is not a very good selling point from the uranium producers' point of view. The uranium producers do not like our type of plant because we burn uranium two or three times as efficiently as any other nuclear power reactor. The American reactors are wonderful reactors for the uranium industry because they chew up a lot more uranium.

Mr. Foster: My riding contains Elliot Lake and that is why I am concerned with this problem.

What is the total amount of uranium produced per year from all our mines? I was just wondering how much we use up domestically in Canada of the uranium that is mined?

Mr. Gray: Quite a small percentage. Uranium is not our field.

Mr. Foster: I realize that.

Mr. Gray: We should have the figure but I really would be guessing if I suggested one. It is quite a small percentage.

Mr. Foster: Would it be in the order of 10 or 20 per cent?

Mr. Gray: I would think probably less than 10 per cent.

Mr. Foster: That completes my questions. Thank you very much.

The Chairman: Mr. Deakon, you are next.

Mr. Deakon: Thank you, Mr. Chairman.

May I first concur with some of the members who had expressed their appreciation for that most scintillating and informative trip we had to Chalk River and for the kind hospitality extended to the members of Committee during that trip.

Dr. Gray, I understand that Russian scientists visited the Chalk River plant and Whiteshell. What co-operation do you obtain from the Russians in this regard?

Mr. Gray: We have an agreement with Russia that is fairly circumscribed. I think it is two visits a year each way. We sent a group of four or five people to Russia twice a year and they send a similar number of Russian scientists to Canada twice a year. In the fields of work that they are interested in and we are interested in, there is a very good scientific exchange. They are very friendly. In the areas beyond what is written down it is very difficult to see anything, although I was

there about a year ago and our group was shown anything we wanted to see, including some of their vast research work. There is no

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commercial information passed either way, like our agreements with the U.K. or France or the U.S. It is purely in the scientific field where everything is really published and the scientists just forget about borders and talk quite freely.

Mr. Deakon: That is most commendable.

On page 2 of your summary to the Committee you list three types of reactors: pressurized heavy water coolant; boiling heavy water coolant and boiling light water coolant. Could you please tell the Committee the difference between these reactors and compare them economically.

Mr. Gray: The pressurized heavy water coolant reactor is the only one that we really have a good hold of. As you see, there are a lot of them being built. This is the type of plant that we can offer commercially at a firm price contract and guarantee performance. It is the Douglas Point and the Bruce type plant where the costs are likely to be in the order of 4 mills per kilowatt hours. The boiling heavy water reactor will save money. We expect these pressurized heavy water reactors will switch to boiling which allows you to take more energy out of the same sized channel at lower pressure. You take the energy out by evaporating water rather than just raising its temperature. As the energy transfers to steam by the heat of the evaporation, it is a little more efficient. However, we have not gone far enough in that line to allow Ontario Hydro, for instance, to build a very large plant, because we are just learning. We have changed the small plant to a boiling heavy water reactor to get the experience. But I expect that we will allow some of these pressurized ones that we have built to boil a little bit in order to increase their energy.

So it is a mode. In the next phase of our work we are trying to increase the efficiency of these reactors. The whole process has quite low efficiency, about 30 per cent and we would like to get that up to 40 per cent. One way to do it is to get boiling in the channels. So the boiling heavy water will be an improvement over the pressurized heavy water reactor.

The boiling light water is quite a different problem. You could not make a natural uranium reactor work if it was a pressurized light

water reactor. You have to get less light water in there. One way to do it is to boil it so the density is down. On the one we are building at Gentilly, near Three Rivers, the water is actually in a vapour phase, a mixture of water and vapour, and since most of the leaks that we get are in the pressurized system, that is the coolant systems, by going to light water we get away from this problem of leaks, we hope. We also go directly from the reactor in the boiling light water system to the turbine. You do not go through heat exchangers, just through a steam separator and right to the turbine. So there is a saving of money not only on the cost of the coolant, which is ordinary water, but on the elimination of heat exchangers. It is not as economical in the use of neutrons, I mean the fuel cost will go up because this water absorbs neutrons, but there are many of us who really feel that of all our systems boiling light water is going to be the reactor of the future—but we will not know for about three years.

Mr. Deakon: Aside from having difficulties at Pickering with the electrical workers strike, I notice on page four you had a mechanical failure in the Douglas Point plant. Did this curtail the full production of this plant for some time?

Mr. Gray: It will be down for two months, perhaps a little more. The limiting time on the down time at the moment is the turbine because there is some blading trouble on it that has to be repaired. It was being shut down to check the turbine anyway but now that we have the lid off the turbine we find there is quite a bit more work on the turbine than we had contemplated. We have had the manufacturers over and it looks like the holding item. But yes, there was a mechanical failure. It was an error in design. A design change had been issued from the design office to the plant some months ago but they were too busy to get at it. It was a matter of changing a plug that goes in the channel. There is a machine that hooks on to the end of the channel and shuffles the fuel and there is a plug goes in there. There was an error in the design which allowed some fingers to go in and expand a lot. It was not supposed to happen but by an error in operating procedure it did happen and it is locked on. I think it is probably free now. But we could not move it off and we had to take the machine off the other end. The channel is double-ended, with a machine on each end. This one locked on and, with all the force we had, we could not move it. So we took the other

machine off and took all the fuel out and then we had to put a tool through and force these fingers out to release it. That is about done

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now. If it had not been for the turbine it would have been down about a month. We lose a month's production because of that fault.

Mr. Deakon: Thank you.

The Chairman: Mr. Roy.

Mr. Roy (Timmins): To get back to that Deuterium company, was that heavy water not tendered at the time? Am I correct that there was a western company being formed that was tendering—

Mr. Gray: Yes.

Mr. Roy (Timmins): On the same project?

Mr. Gray: There were several involvements. Western Deuterium was one of the companies; also the man who located in Nova Scotia, Mr. Spevack from New York, was talking about locating in western Canada. The best proposal finally came from the Spevack organization which is Deuterium of Canada Limited, at a location at Glace Bay, because of coal and steam subsidies.

Mr. Roy (Timmins): Do the other proposals look pretty good today after all the trouble there was in Glace Bay?

Mr. Gray: Any proposal where the plant would be running would look very good today.

Mr. Roy (Timmins): Mr. Gray, in layman's language how would you describe heavy water?

Mr. Gray: It looks exactly like this. It is 10 per cent heavier. It would taste exactly the same. It freezes at a slightly higher temperature. It has two characteristics. It is very expensive—\$20 a pound or \$28 a pound in the United States—and it is the best known material to have inside a thermal reactor to slow down neutrons until they have a chance to split uranium. It slows them down without catching them. Ordinary water absorbs the neutrons. Heavy water slows them down, it is the most efficient moderator there is in the world, and that is the backbone of the whole Canadian program and has been since 1943. The scientists right at the start picked the best moderator they could get and said, "Now let us respect this moderator and let us make

it work". This is where Dr. Lewis's main contribution has been. He has been so miserable about loss of neutrons that he has made the people produce a good reactor.

Mr. Roy (Timmins): In two words, how do they make it heavy?

Mr. Gray: All normal water is made out of H_2O and D_2O deuterium oxide, and, as I said earlier, about 130 or 140 parts per million of this water will be D_2O . You separate the D_2O out and that is why it is so expensive. You separate it out by an exchange process—cold and hot exchange with an H_2S catalyst. So that all you do is separate the deuterium oxide out of this water.

Mr. Roy (Timmins): Thank you.

The Chairman: Mr. Marchand, do you have a supplementary?

Mr. Marchand (Kamloops-Cariboo): How stable is the heavy water?

Mr. Gray: It is stable.

Mr. Marchand (Kamloops-Cariboo): I see.

Mr. Gray: It is not radioactive.

Mr. Marchand (Kamloops-Cariboo): You say it is deuterium oxide?

Mr. Gray: D_2O . H_2O is water. Heavy water is D_2O —deuterium oxide?

Mr. Marchand (Kamloops-Cariboo): I should go back to my basic chemistry again. I used to think that it was a chemical structure where there were actually more hydrogen atoms attached to the oxygen—

Mr. Gray: It is an isotope of hydrogen really.

Mr. Marchand (Kamloops-Cariboo): So deuterium really is an isotope of hydrogen.

Mr. Gray: Yes, as tritium is an isotope of hydrogen.

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Mr. Marchand (Kamloops-Cariboo): Which?

Mr. Gray: Tritium is another isotope of hydrogen. As you go up the scale you will get deuterium and then tritium. It is a different isotope with different characteristics. This has been known for many, many years.

The Chairman: Mr. Harding.

Mr. Harding: Mr. Chairman, I just have two or three questions more I would like to ask Mr. Gray.

The ING program has been mentioned here tonight. It has been cancelled. Mr. Gray, what was the end object of this research program that you had set up?

Mr. Gray: The main immediate object of ING was an intense neutron generator; that is, some years ago the Board of Directors asked our scientists what should we be doing ten years from now in research? They spent a year or two years looking at hydro-dynamics, fusion, fast reactors, bigger reactors, many things, and they came up with the project of this intense neutron generator. They wanted to have an intense source of neutrons. The NRX reactor was the best reactor in the world when it was built. It is still a very good reactor, with an intensity of neutrons of 10 to the 12th. Then we built the NRU reactor which went up a factor of 10. And it was the best reactor in the world to do research for eight or ten years. Now it has been surpassed. To build another reactor of this type, it was pretty hard to go much further than the Americans have gone or the British and Europeans have gone in producing neutrons by fission. The scientists came up with a new idea that if you bombarded a metallic target like lead bismuth—it is called spallation, the splitting off of neutrons—if you bombarded it with enough energetic particles, this would produce a very high intensity of neutrons so that we ended up with, not a reactor, but a similar with a very high intensity of neutrons, 10 or 20 times as high as anybody else had in the world. That was the fundamental thing so that they could use that as a source of neutrons. It happened that along the route to produce this they could take a beam off sideways and produce what they call mesons which is another important particle that is now becoming one of the main research tools in the United States, that is a thing they are building out in Vancouver at TRIUMF the Tri-University Meson Facility. Also with these very intense neutrons we could produce isotopes like Cobalt 60 and so on that are higher intensity than any other. So we would have had a very good research tool not only for neutrons but for mesons, we would have had a very good tool for producing isotopes of a very high intensity for research and for medicine.

Then the ultimate of this thing was that it might have been an electrical breeder; that

is, in order to produce the particles of high energy you have to put quite a bit of electrical power in an accelerator, and Dr. Lewis and the boys with their calculations felt that with the neutrons they produced, they could produce fissionable material like plutonium or uranium 233 that itself would produce more energy than the electrical energy they put in. If they put one watt of energy into it, they could produce material that could produce one and a half watts. So that, there was what they call an electrical breeding. They would actually be able to produce more energy than they were putting into the machine. That was a long way off. It was theoretically possible, but it was glint in the scientist's eye. It was a very big program. This, as you know, was going to cost \$125 million to \$150 million to build and about \$25 million a year to operate, but it would have been a tremendous machine, an outstanding machine in the world.

Mr. Deakon: I have a supplementary. Are the Americans working on this breeder?

Mr. Gray: On the breeder, but not this. They are working on a breeder that uses fission as a source of neutrons; this used spallation as a source of neutrons.

Mr. Harding: Mr. Chairman, I had another question or two. Actually I was very struck by a comment that Dr. Lewis made. He felt that a project of this type was, as he put it, the key to nuclear success in the nineties as far as Canada was concerned. He is many, many years ahead, I imagine, of even people in his own field, and generations ahead of Committee members. Nevertheless, I thought it was a very interesting remark.

Mr. Chairman there are one or two more questions that I would like to ask of Mr. Gray. Where do you find most of your supplies now for nuclear equipment and so on? Do you have to go outside the country to do this?

Mr. Gray: For some things we do, but we make a policy in our nuclear power stations, including the ones we design for Ontario Hydro; of not buying anything in the nuclear end of the plant that can be built in Canada. There are some items of the nuclear part that still come from outside the country such as zirconium pressure tubing for the reactor, some of the pump parts. I would say a very large percentage of the nuclear portion of the plant is made in Canada—by definition.

Mr. Harding: I have another question in connection with the manufacturing of certain

nuclear equipment. We had a bit of discussion about this at Chalk River. What is your Department doing in trying to encourage the manufacture of this type of equipment in our own country?

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Mr. Gray: First of all we are ordering it only from Canadian suppliers. A lot of the equipment design is done by us; then we go into the plant and do our darndest to get the equipment supplied to specification on time. It is not easy.

We have one very good example of what we have done; this is nuclear fuel. Back in 1955 we had at Chalk River a fuel fabrication plant; we were going to make our own fuel our reactors. We decided that this was probably wrong. This was an area where industry could really get in and there would be enough business to make it a healthy business. So we set a private company up in the fuel manufacturing business and we put about \$2 million a year into that company, and subsequently a second company, for over ten years. They are Canadian General Electric and Canadian Westinghouse and now both are fully qualified nuclear fuel suppliers and are bidding competitively for Ontario Hydro business, for our business, for overseas business. This program has been entirely paid for by the taxpayers. But they are fully qualified and now in that field they are on their own.

Mr. Harding: Do you see other possibilities of manufacture within Canada of things which we currently have to buy outside?

Mr. Gray: Oh yes, we are doing it all the time. On the pressure tube for these reactors, which is something like a couple of million dollars a year business (it is not as big as the fuel business, perhaps) we are at the moment working with two companies to qualify them as tubing suppliers. We did this for the calandria tube, the tube that goes outside the pressure tube. We have in the last year qualified Canadian Westinghouse to be a calandria tube supplier, so they are now bidding on calandria tubes. This goes for fuelling machines. I do not know whether we have qualified anybody to build fuelling machines;

we have not got them to work very well yet, but they are being manufactured in Canada by Canadian companies.

Mr. Harding: Could you go to these companies maybe with a design and suggest that they manufacture, and then would you kind of guarantee that you would buy supplies from them if they were competitive?

Mr. Gray: What we usually do on a fuelling machine is place a development contract with a company and work with them for two or three years on manufacture. If we have a full design of our own, and there is more than one company that we feel is qualified to supply it, we go with the design to the companies and ask them for proposals. It may be a cost contract proposal or a firm price contract proposal. Then they would bid on it. If there is only one pressure tube supplier, if we only qualify one because there is only enough business for one, he has to be competitive with the American supplier. There is no reason why he cannot be, once he is qualified. We spend a lot of time, a lot of money trying to qualify our industry in the nuclear equipment field. We have been quite successful in some areas and a complete failure in others; partly our fault and partly the suppliers' fault.

Mr. Harding: That is fine, Mr. Chairman. Thank you very much.

Vote 65 agreed to.

Vote 70 agreed to.

Vote L15 agreed to.

Vote L20 as amended agreed to.

Vote L25 agreed to.

Vote L30 agreed to.

Mr. Marchand (Kamloops-Cariboo): Mr. Chairman, I have perhaps one recommendation here. When the fellows are considering the next scientific excursion to Russia I wonder if they would consider taking the Committee along.

The Chairman: I want to thank Mr. Gray, Mr. Watson, and Mr. Sprague for being with us tonight.

The meeting is adjourned.

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HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

ON

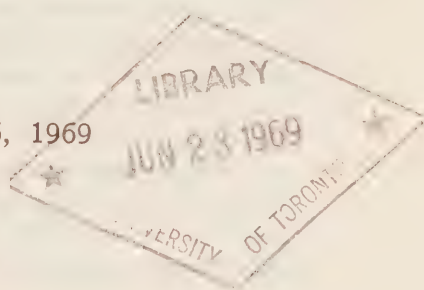
**NATIONAL RESOURCES
AND PUBLIC WORKS**

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 24

MONDAY, MAY 26, 1969



Respecting

Main Estimates (1969-70) of the Department of Public Works

WITNESSES:

(See Minutes of Proceedings)

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen
and Messrs.

Beaudoin,
⁸ Breau,
Chappell,
Comeau,
⁵ Cullen,
Forrestall,

Gilbert,
Harding,
¹ Langlois,
⁴ MacDonald (*Egmont*),
⁷ MacGuigan,
³ Macquarrie,

⁶ Mahoney,
Marchand (*Kamloops-
Cariboo*),
² McQuaid,
Orange,
Ritchie,
⁶ Whicher—(20).

(Quorum 11)

Timothy D. Ray,
Clerk of the Committee, pro tem.

Pursuant to Standing Order 65(4)(b),

¹ Mr. Langlois replaced Mr. Lind on May 22, 1969.

² Mr. McQuaid replaced Mr. Aiken on May 26, 1969.

³ Mr. Macquarrie replaced Mr. Code on May 26, 1969.

⁴ Mr. MacDonald (*Egmont*) replaced Mr. Paproski on May 26, 1969.

⁵ Mr. Cullen replaced Mr. Roy (*Timmins*) on May 26, 1969.

⁶ Mr. Whicher replaced Mr. Anderson on May 26, 1969.

⁷ Mr. MacGuigan replaced Mr. Sullivan on May 26, 1969.

⁸ Mr. Breau replaced Mr. Foster on May 26, 1969.

⁹ Mr. Mahoney replaced Mr. Barrett on May 26, 1969.

[Text]

MINUTES OF PROCEEDINGS

(Visit to Burlington)

WEDNESDAY, May 21, 1969.

On Wednesday, May 21, 1969, members of the Standing Committee on National Resources and Public Works left for Burlington, Ontario, for a visit to the Canada Centre for Inland Waters of the Department of Energy, Mines and Resources.

Members present: Messrs. Barrett, Chappell Forrestall, Foster, Gilbert, Haidasz, Harding, Hopkins, Lind, Marchand (*Kamloops-Cariboo*), Orange and Sullivan, (12).

In attendance: Dr. A. T. Prince, Director, Inland Waters Branch; Mr. J. P. Bruce, Acting Director, CCIW, and other officials of the departments of Energy, Mines and Resources, of Fisheries, and of National Health and Welfare.

The group was welcomed in the Conference Room by Dr. A. T. Prince; Mr. Bruce made a few remarks and a film "What About Water" explaining the work of the Centre was shown; printed information was distributed to the Members.

The Heads of the various sections were introduced, and the party boarded the "Martin Karlsen" for coffee and a short cruise during which the Members witnessed some of the tests made on the Lake and analyses made in the ship laboratories.

The Members were the guests of the Department of Energy, Mines and Resources for lunch, after which the party returned to the Centre to tour the facilities.

After the visit, the Members were invited to an informal gathering and dinner at the residence of Mr. Gordon Sullivan, M.P. of Hamilton.

At 9.00 o'clock p.m. the Members boarded the plane in Toronto for the return trip to Ottawa.

Gabrielle Savard,
Clerk of the Committee, pro tem.

MONDAY, May 26, 1969.
(24)

The Standing Committee on National Resources and Public Works met this day at 8.08 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Breau, Cullen, Gilbert, Harding, Hopkins, Hymmen, Langlois, MacDonald (*Egmont*), MacGuigan, Macquarrie, Mahoney, Marchand (*Kamloops-Cariboo*), McQuaid, Orange, Whicher—(15).

Members also present: Messrs. Lind, MacLean and Pringle.

Witnesses: From the Department of Public Works: The Honourable Arthur Laing, Minister; Mr. Lucien Lalonde, Deputy Minister; and Mr. G. B. Williams, Senior Assistant Deputy Minister.

The Chairman called Item 1 of the Public Works Estimates and introduced the Minister and his officials.

A point of order was raised by Mr. MacDonald (*Egmont*) to the effect that Colonel Churchill was to be present as a witness.

Discussion followed, during which the Chairman read a telegram from the Premier of Prince Edward Island.

Following discussion, the Chairman ruled that as Item 1 of the Public Works Estimates did not make mention of the P.E.I. Causeway, then it was outside the order of reference of the Committee.

The Minister was invited to make his statement, copies of which were distributed to the Committee.

The Committee then proceeded to the questioning of the Minister and his officials.

Following the questioning, the Chairman referred back to his ruling on Mr. MacDonald's point of order.

After discussion, it was moved by Mr. Gilbert, that Colonel Churchill be invited to appear before the Committee.

The Chairman ruled the motion out of order on the basis of his prior ruling on Mr. MacDonald's point of order.

It was,

Agreed,—That the matter of calling Colonel Churchill be referred to the Subcommittee on Agenda and Procedure.

At 10.20 p.m., the Committee adjourned to the call of the Chair.

Timothy D. Ray,
Clerk of the Committee, pro tem.

EVIDENCE

(Recorded by Electronic Apparatus)

Monday, May 26, 1969.

● 2011

The Chairman: Gentlemen, we have a quorum; therefore, I will call the meeting to order. We have to complete our discussion on Vote 1 of the Department of Public Works. We have passed all the other estimates of this Department.

DEPARTMENT OF PUBLIC WORKS

- 1 General Administration, including grants as detailed in the Estimates,—\$23,940,000

We have the Minister with us tonight. For the benefit of those who do not know his two assistants, I will ask Mr. Laing to introduce them to you. Then we will have an opening statement from the Minister. Mr. Laing.

Hon. Arthur Laing (Minister of Public Works): Thank you, Mr. Chairman. The gentlemen with me are Mr. Lucien Lalonde my Deputy Minister, who is seated at the end of the table, and Mr. Gerry B. Williams, my Assistant Deputy Minister, who is seated next to me.

First of all, I would like to make a statement on this subject, if it is agreeable to the Committee.

Mr. MacDonald (Egmont): Mr. Chairman, on a point of order. It is my understanding that this evening's meeting is to deal with the question of the Northumberland Strait Crossing. Is that correct?

The Chairman: Yes; there might be a couple of other items that the members may wish to clear up before the evening is over, Mr. MacDonald, but that is the item on the agenda.

Mr. MacDonald (Egmont): The reason I have raised that question is because I indicated to you the importance of having one particular witness here who is perhaps more intimately connected with this project than any other person and who is an employee of the Department; I am speaking of Colonel Edward Churchill. Last week I was trying to ascertain whether or not he would be here. I

indicated to you, as Chairman, the importance of his appearing before this Committee in order that we could have a satisfactory discussion of this project. I am just wondering if he is a little late or if there has been any other difficulty.

The Chairman: Mr. MacDonald, you will recall that on the very day that I was speaking to you, I clearly indicated that it would be Mr. Laing and his officials who would be with us. I did not state at any time that Colonel Edward Churchill would be present this evening.

I think it would be appropriate at this time, now that you have raised the subject, to place on record a telegram that I received this afternoon from the Premier of Prince Edward Island. I will quote the telegram:

I understand your Committee is meeting this evening to give consideration to certain matters pertaining to the Department of Public Works. I most earnestly support recommendations that Colonel Edward Churchill be called before your Committee to give evidence relating to the Northumberland Strait Crossing.

When I received this telegram, I asked for legal advice on it from the House of Commons. The ruling that was given to me was that since the Estimates of the Department of Public Works were referred to this Committee, and since the Northumberland Strait Crossing as such does not appear at any place in the Estimates, then we are bound by a reference from the House of Commons, and are not in a position to call outside witnesses at this time. Moreover, I did look into that aspect for you.

Mr. MacDonald (Egmont): On that point of order. Mr. Chairman. It would seem to me that there are two basic weaknesses in the advice that was given to you as Chairman. One is this: it is my understanding that Colonel Churchill has been and still is an employee of the Department of Public Works; as such I assume that he, as all other officials, are allowed to testify before a committee when the committee so desires.

• 2015

Secondly, I have been examining some of the other committees' minutes, and from time to time, committees charged only with the Estimates have called upon people who were not departmental people, to testify. One committee may be operating by one set of rules and another committee operating by another. The rules do not seem to be consistent. I would be interested if other members of the Committee see this as being a rule which should be applied in future against other committees, because I do not think that it has existed in the past.

Mr. Hymmen: Mr. Chairman, since we have the Minister with us, I think the first thing we should do is have a statement from him on this matter because it is of interest to members from Prince Edward Island particularly and indeed to members from other provinces. The Minister is prepared to make a statement and I suggest that we hear it. After the statement has been given, we can proceed from there.

Mr. MacDonald (Egmont): I think we should clear this matter up. It is an important one as it affects not only this Committee, but if it is accepted as a precedent, then it will affect every committee, and greatly limit their powers of inquiry when dealing with the Estimates. Now that we have moved into an era where the Estimates are going to be much more thoroughly screened by committee, it seems to me that the acceptance of such a decision would be highly retrograde. I cannot believe that either the Minister or his officials would willingly want to accept that kind of precedent.

Mr. Hymmen: Mr. Chairman, as a member of the steering committee, it was my understanding that we would not call Colonel Churchill. This was the understanding reached at the steering committee meeting prior to this meeting.

Mr. Harding: Mr. Chairman, when did the steering committee meet? I am supposed to be a member of it but was never notified of any meeting; I was unaware that this matter was coming up.

Mr. Hymmen: This matter was discussed several weeks ago.

The Chairman: We discussed this at a steering committee meeting, Mr. Harding, where we drew up a tentative schedule for

the remainder of the hearings of this Committee, which included the trip to Burlington which we recently took. I would not want to leave any impression that someone was not invited to that particular meeting, because everyone has always been informed of every steering committee meeting that we have held.

Mr. Harding: Mr. Chairman, I understood from what Mr. MacDonald said previously that a meeting had been held quite recently. I cannot recall this discussion of Mr. Churchill, although it may well have taken place.

The Chairman: I distinctly remember its being discussed at the steering committee meeting, Mr. Harding; however, I would have to check the records to find out if you were present or not.

Mr. Gilbert: Mr. Chairman, on a point of information. Is the Minister's statement tonight going to be confined to the Northumberland Strait Crossing or is it a general statement?

An hon. member: The Northumberland Strait Crossing is the subject for this evening.

Mr. Gilbert: Surely, Mr. Chairman, we are masters of our own house in this Committee. I could not for one minute believe that the Minister, who is a very co-operative and intelligent man, would refuse to bring a witness who has the knowledge and experience that Colonel Churchill has. I am sure that if you, as Chairman, were to ask Mr. Laing to bring him, that he would be most delighted to do so.

The Chairman: I would like to do that, Mr. Gilbert, but I am not going to put myself in the position of making decisions for this Committee. If the Committee wants to put forth a motion to this effect, then that motion should be entertained now. I suggest that the Committee decide its own future in this regard.

Mr. Orange: Mr. Chairman, on this point of order, it seems to me that in the steering committee meetings that we have held on this subject, that we have discussed the probability

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ty and the possibility of the Minister of Public Works coming before the Committee to outline his views on the Northumberland Strait Crossing. This was agreed upon by the Committee members; I am not certain of the dates but I am sure that your records will

show when this matter was discussed. As you said, this was outlined when we set out our program for the next number of meetings, in order to meet the deadline of the Estimates. This evening we were to listen to the Minister and talk to his officials. However, as Mr. Gilbert has pointed out, the Committee is master of its own destiny and if at this stage it seems desirable for us to call on other people, I think we could take this approach. However, I think we should listen to what the Minister has to say and then interrogate him, as committees are doing during this Parliament, and then we can determine where we must go from there. At the moment I think we are faced with the question of the estimates of the Department of Public Works, and I think if Mr. MacDonald will recall his questions in the House of Commons, he asked that this matter be referred to the Committee but no specific commitment was made except that it would be discussed. I believe we should proceed from this particular base, that is, to listen to the Minister and then as a committee collectively—and I think we have had a good relationship on this Committee—move to determine where we will go from here.

Mr. MacDonald (Egmont): Mr. Chairman, I am certainly not opposed to hearing the Minister. I think it is very important, in fact, that we do. As you know, I have certainly been most anxious to have him appear before the Committee on this matter. My basic concern is simply in getting as full a picture as we can, keeping in mind our other time commitments.

I think it is important for the Committee to recall the fact that in 1967, when great difficulties arose with respect to a major tender call, the Prime Minister and the then Minister of Public Works appointed Colonel Churchill to act as a special representative or expeditor in the further implementation of this project. It is my understanding that he has now spent the better part of two years—I have not spoken to the man directly—primarily in the relationship between the Department, Northumberland consultants and prospective contractors, as well as various research teams that were attempting to come to grips with some of the more difficult problems on the crossing project. Quite frankly, I find it unusual that there should be any opposition, whether from yourself, the Steering Committee or anyone else, to having Colonel Churchill appear before the Committee. He is a very respected engineer. In this country we

certainly have great respect for his achievements at Expo and it is my belief, at least, that when a man of Colonel Churchill's stature is associated with the Northumberland crossing project that his counsel and his testimony before this Committee would be extremely important. I was really quite shocked to discover that there seemed to be very little inclination to have Colonel Churchill here this evening. If it is possible, as Mr. Orange suggests, I think further inquiry should be had with Colonel Churchill. I certainly am not going to raise any objections at this point, but it seems that we are going to have a couple of hours this evening and that will be it. I think without Colonel Churchill it will not only be inadequate, but I think we would be derelict in our responsibilities in as much as the government has already spent many millions of dollars on this project and I think we have a responsibility to appreciate its full dimensions and that the country has a right to know the many aspects of this. We have had almost no explanation about this project for the last two years and it is merely as an item of information that I have voiced my concern this evening.

Mr. Hymmen: Mr. Chairman, I do not want to carry on with this, I merely want to say one thing. I think with all deference to the Minister, who is present, that we should hear his statement. Mr. MacDonald has insisted that Colonel Churchill should be here. Many things have gone on since the Northumberland Strait causeway was first proposed, including the present plan of regional economic development for the Province of Prince Edward Island, which is \$300 million or \$3,000 per person. I just mention this in passing. Rather than putting the cart before the horse, I think we should deal with this matter and hear the Minister's statement. If, as Mr. Orange suggests, you are not satisfied with his statement, we might discuss the matter further later.

• 2025

Mr. MacDonald (Egmont): May I just make one final comment in connection with the telegram which was received today from the Premier of Prince Edward Island. I was certainly very glad to learn that the Premier sent this telegram to the Committee because I know that earlier in the session of the provincial legislature of Prince Edward Island the government of P.E.I. attempted to have Colonel Churchill appear before their Public Works and Highways Committee on the mat-

ter and at that time Colonel Churchill was forced to refuse because, as he indicated very clearly, he was a federal official and as such it would be impossible for him to appear before a provincial legislative committee. As there is no possibility of his appearing before the provincial legislature of Prince Edward Island, I think an even stronger requirement is placed upon this Committee to have Colonel Churchill appear as an expert witness before us on this question.

Mr. Orange: Mr. Chairman, I would just like to add one word. As a Steering Committee and also as a Committee we have discussed the method by which we would handle the question of the Northumberland Strait crossing and to the best of my knowledge there was no suggestion from Mr. MacDonald's party, in the Steering Committee or otherwise, that Colonel Churchill appear. I find it rather surprising that he would now come to this meeting and suggest that Colonel Churchill be present. I like to think that perhaps as a result of listening to the Minister we may be able to make some decisions in this regard. I would like to suggest to Mr. MacDonald that his party made no representations with regard to the appearance of Colonel Churchill and for him to suggest it this evening as sort of an opener to our meeting seems, at least to me, a bit strange and a bit beyond what we are attempting to do here this evening.

Mr. MacDonald (Egmont): The suggestion may be new to Mr. Orange but it is certainly not new to you, sir. I made this suggestion to you on a number of occasions.

Mr. Orange: I just made the point that your party did not make any recommendations in this regard during the Steering Committee meetings.

Mr. MacDonald (Egmont): I am not on the Steering Committee.

Mr. Gilbert: Mr. Chairman, to finalize this matter...

Mr. MacDonald: Some people had already been invited to the Steering Committee, so there were a lot of...

The Chairman: May I have order, please.

Mr. Hymmen: On a point of order, Mr. Chairman. All parties are represented at Steering Committee meetings. If they were not able to attend, that was their responsibility.

The Chairman: Gentlemen, I believe Mr. Cullen has something to say in this regard, after which we will arrive at a decision to either proceed with the Minister or to hear witnesses. Mr. Cullen.

Mr. Cullen: Thank you, Mr. Chairman. I think this is the second time I have been on this Committee, although not on this particular matter, and I understood that when you raised your hand you were recognized by the Chair and were given an opportunity to speak. I did not want to be rude and interject. One of the things that concerns me, whether it is a meeting of the Steering Committee or of this Committee, is that it is just not always possible for members to get to Steering Committee meetings or meetings of this Committee.

Frankly, I do not know what Colonel Churchill's involvement is in this thing but if the Premier of Prince Edward Island feels he should be present and if a member from Prince Edward Island thinks he should be present, I cannot for the life of me see why we are splitting hairs. I think we should hear the Minister and afterwards we can make a decision. I would like to hear Colonel Churchill. I think the Minister has a point of view which he would like to make, and apparently Colonel Churchill has as well, but surely we are not bound solely by the decisions of the Steering Committee. It is difficult enough to get to Committee meetings and it is not always possible to get to Steering Committee meetings. I would like to hear the Minister and then afterwards I think we should make a determination. I do not understand Mr. MacDonald to be saying that we should have Colonel Churchill here tonight or that we should close the meeting and all go home and come back when Colonel Churchill can be present. Surely we can leave the door open on this. We will hear the Minister and if the Committee decides that it would also like to hear Colonel Churchill, then let us hear Colonel Churchill, but I do not think we should close the door on him. If the Premier of P.E.I. wants him here, that is good enough for me.

The Chairman: I might say that the Committee may have to make the final decision on this. Section 304(1) of Beachesne's states:

(1) A committee can only consider those matters which have been committed to it by the House.

Subsection (2) reads:

(2) A committee is bound by, and is not at liberty to depart from, the order of reference...

This matter concerns me because the role of the committees is changing and there is a major role for committees to play. It is not my intention to mislead this Committee in any way. I am interested in running this Committee according to the rules which have been laid down for us and I have looked up the rules in consideration of this matter. If at this time the Committee is willing to go ahead and hear the Minister and put questions forward, I think we would then perhaps be in a better position to resolve the situation at the end of the meeting if we could all agree to stop a few minutes early for a final discussion on it. Would that be agreeable to the Committee at this time?

• 2030

Some hon. Members: Agreed.

The Chairman: All right. Mr Laing.

Mr. Laing: Thank you, Mr. Chairman.

There are few projects with which Public Works have been associated that have generated as much discussion and given rise to as much advice as we have received since we became associated with a crossing for Northumberland Strait.

The government has operated a ferry system to provide transportation to and from the Island, and considerations of alternatives to the ferry system were properly in our jurisdiction. While schemes go back to the eighteenth century for a tunnel, the situation which the Committee wishes to examine today was started in 1956 when the Province of Prince Edward Island asked the government to examine a proposal developed by Mr. O. J. McCullough to build a causeway similar to that at Canso. As the proposal of Mr. McCullough was based on obtaining rock at the New Brunswick end, and possibly in Prince Edward Island he said, to be used for dump fill, investigations were undertaken as to the availability and suitability of rock. It was established there would be substantial problems in providing adequate rock in terms of quality and quantity.

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The federal government concurrently undertook to establish financial limits which

would be practical in terms of ferry operations, and an examination of the feasibility of the McCullough scheme as well as alternatives. These studies resulted in the determination that a permanent crossing was feasible; a total closure of the strait by causeway would not be a good solution, but alternatives providing combinations of causeway and bridges were feasible.

In 1962 the government directed, and Public Works undertook with the appointment of a consortium of consultants, further field investigations and the development of alternatives so that estimates of cost could be provided. In July of 1965 the government approved of the construction of the crossing for rail and highway traffic by means of a combination causeway bridge and tunnel portion to provide for marine traffic in the Strait. The estimate of cost at that time was \$150 million and construction was started on approach roads in New Brunswick which would be required for the crossing, but particularly as they would be required for the construction operations in building the balance of the crossing.

In March of 1967 tenders were received on Phase I of the project—a two-mile causeway from the New Brunswick shore. The lowest tender was \$43 million against an estimate of \$25 million. If the same spread between estimate and tender was to apply on the balance of the project, the total cost would have exceeded \$300 million. This necessitated a total review of the project and the Cabinet directed the Department of Public Works as follows:

(1) Review designs to more accurately determine cost and establish any potential reductions;

(2) establish the capital cost of providing rail service;

(3) consider additional alternatives, including a full tunnel for rail ferry service and supplemental vehicle service by means of hovercraft.

The Department of Public Works completed these studies and established that a fixed crossing for two-lane highway traffic convertible to four lanes at a future date could be constructed for \$213 million.

The crossing would be almost totally a bridge, but with some causeway approach on the New Brunswick side and provision for marine traffic which would be by an elevated section of the bridge. This solution would

require that rail service would be continued on a ferry system.

In developing the estimates, full consultation has taken place with an advisory committee composed of contractors, material supply people, bonding and insurance companies, so that in achieving the reduction in cost estimates, we were assured to every extent possible that they were capable of being met, and we had eliminated to the extent possible, the imposing of risk factors on any tenders requested from the construction industry.

As I have noted, this task of Public Works has been undertaken and I have reported to my colleagues.

Speaking now as a member of government rather than specifically as Minister of Public Works, it has been necessary for us to consider this project in relation to our overall priorities for cash. To proceed with it would impose over the next six to seven years, heavy demands for cash to achieve the purpose, that is, transportation to the Island, which could be met with less impact on our immediate cash requirements by a continuation of the ferry service.

In arriving at its decision, the government also had to take into consideration its contribution to the development plan for Prince Edward Island. This was a plan to which we felt priority had to be given, since it promises to provide great opportunities of progress for the people of that province. The federal government has therefore undertaken to put up \$125 million in the next 7 years and \$225 million over the 15-year duration of the plan.

In considering our overall cash requirements and making judgment on the priorities of the many programmes proposed, the decision was that we could not proceed with the construction of the fixed crossing.

Suggestions have been made that there are firms or private groups who are prepared to finance and operate the causeway on a lease-back arrangement with government cash flow to the project in the same order of magnitude as would arise from the operation of a ferry system. The proposals which had been put to the government have been on a basis which would in effect be a Crown corporation under which the government would undertake to raise the capital by borrowings. Alternately, a private consortium would raise the money but on the basis of government guaranteed borrowings and completion if there was default.

These arrangements would be equivalent to the government undertaking the project on an indirect basis and would cost more than if the government were to borrow the funds itself. The fact that the private groups suggested that government guarantees would be required presumably reflects their unwillingness or inability to assume the risk themselves.

● 2040

In essence, the position of the government is that, after considering our overall priorities, our financial position, and the various options open to us, we have decided not to proceed with the construction of a fixed crossing for vehicular traffic with supplementary rail ferry service. Instead, we intend to provide an improved level of total service by means of an expanded ferry system.

The Chairman: Thank you, Mr. Laing.

First of all I will call on Mr. MacDonald for questioning.

Mr. MacDonald (Egmont): Mr. Laing, in your opening statement you elaborate to a greater degree but on very much the same line as that presented by the Prime Minister when he made his remarks on the subject on March 5 in the House of Commons. Perhaps one of the most important things that is said, or perhaps not said, in this statement is to the general effect that in the continuation of the car ferry service as against the construction of the Northumberland Strait crossing, the decision was taken, not with the belief in mind that the continuation of the car ferry operation would, in fact, be a cheaper operation.

Am I right in making that assumption, or since it is not stated, I am wondering whether or not this is not the fact? The basic problem that the government, in fact, encountered was because of severe limitations on capital at the moment it was not able to contemplate the amount of money necessary over the next five-to seven-year period involved in the construction of the crossing, and as an additional, but secondary, reason the greater priority the government gave to the implementation of the development plan.

I think this was as you would admit, a unilateral decision, I do not think the Government of Prince Edward Island had an opportunity to agree or disagree with the federal government's decision in this regard. I am wondering at this point whether or not

the basic decision rested on the availability of capital, rather than the belief that it would be cheaper for the government to continue with a ferry service than to implement the crossing project?

Mr. Laing: My reply to you would be that the main concern and the immediate determinant in the government decision was the unprecedented call upon capital over the next several years that would be entailed had we proceeded.

Mr. MacDonald (Egmont): If I can carry this a little farther with you, I wonder whether or not then the decision that was taken and announced in March is as irrevocable as it seemed to be at that point, and in questions and answers since to the Prime Minister and others of the government? For instance, if the cost of money and the availability of capital to the government resumes the position that was enjoyed, say, from the 1963-65 period, would the government then feel inclined to resume this project?

Mr. Laing: I am not the Minister of Finance and I would not make predictions on the financial picture for the next several years, but I think I would be over optimistic if I suggested that our cash situation is suddenly going to improve. I do not think it is next year and I would have some reservations about it improving in the following year, or probably even the year after that.

I think we are in for a rather tight situation in money in this country when we have private capital enterprises expanding at the rate we have at the present time. I think our construction is going up. It is 9.2 per cent this year which is an increase over last year. You will recall that the Prime Minister and the Minister of Finance have said that we intend to modify our borrowings to make more capital available for private enterprise which is developing in the country very rapidly. So I would think that if you are asking me if there is going to be a one-year delay and that the matter would be revived in one year, I would think not.

Mr. MacDonald (Egmont): No, I am not really asking you about a period of one year but I am asking you about a period of some years. I think we recognize that the problem

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is we are caught up in an inflationary cycle where there is an exceedingly high interest

being charged on borrowing, and this effects the government as well as any private borrowers.

Mr. Laing: Mr. MacDonald, in addition to that we have made a decision to service the Island now by ferries.

Mr. MacDonald (Egmont): That is not a new decision though.

Mr. Laing: An improved ferry service entails more capital cost there in ferries, and many of these ferries are ferries that must be used there as you know. I think that that decision takes care of the Island connection for several years.

Mr. MacDonald (Egmont): What I am really trying to deal with here is the fact that I think over the years the basic reason for the implementation of the project has been misunderstood. I think it has been largely misunderstood by many people that the construction of this project was merely to overcome perhaps the problems that have been encountered by many industries or individuals on Prince Edward Island in achieving better transportation connections with the mainland, and laterally perhaps to offset some of the pressure of the increased tourist trade.

However, it has always been my belief that the basic reason for the construction of this project was as a long-term saving to the federal government, faced as it was with an increasing subsidy, plus increasing maintenance costs, and the requirements of larger and more and more new car ferries.

Mr. Laing: That is true but those are not all of the facts. In addition to that it has been repeatedly stated that because of the nature of the industry there and the nature of the products, their value is dependent largely on getting them to the market as economically and as quickly as possible I am talking of some of the perishables with which you are familiar, the lobster catch, and this sort of thing which would bring a bigger return were it delivered to market more quickly. I think probably just as much emphasis was placed on that aspect of improving the economy within the Island out of better transportation as was placed on the fact that money might be saved against the ferries.

Mr. MacDonald (Egmont): It would seem to me that at some point, and I am interested in just at what point, the government changed its mind. The number of times that successive governments have committed themselves to

this project is almost legion. I think one of the last recorded statements on record was by Prime Minister Pearson in December 1967. At some point the assessment of this project and of its merits shifted by the government, and I am wondering if you can indicate to us at what point those changes occurred?

Mr. Laing: I think it occurred when we made a determination to economize, and this was part of a number of economies that were announced at that time. There were other cancellations as well.

Mr. MacDonald (Egmont): I gather though the difference between this one and the others that I can recall that were cancelled was that it was not simply a matter of cancelling a capital expenditure that would not occur anywhere else, but it was a matter of cancelling this one but still being committed off into some time in infinity to the car ferry operation, not only at its present level, but as you, yourself, said a moment ago at increased levels of service, which can only mean greater expense to the federal government.

Mr. Laing: Mind you, an additional matter of considerable importance was the studies and consultations that were then underway with the Government of the Province of Prince Edward Island with respect to the other plans to improve the economy of the Island and they were going along together. I must say that in the judgment of most Canadians, I think, when we talked about the plan to improve the economy with an expen-

• 2050

diture of \$125 million over 7 years, a total of \$215 million over 15 years, and put a bridge on top of that at a cost of \$180 million, or \$213 million as we indicate here including the expenditure already made, that this was a very great sum of money to put in one place. It did not get down to an either/or, but I think it became apparent, and I think that statements were made by members of the government, that both plans, or at least the construction, could not be undertaken and have the other plan go into effect as well.

Mr. MacDonald (Egmont): Since the other plan—and this is the second aspect of your decision—was indeed a joint plan participated in at all stages by both the governments of Prince Edward Island and the Federal Government and signed in April by both governments.

I am wondering—in view of the great importance of this project to the government and to the people of Prince Edward Island, the very excellent brief that was submitted last fall to the government outlining in some detail the various effects that the construction of this and its eventual use would have on the economy of the area—since the implementation of this plan itself had to be agreed upon by both parties, why the decision in effect cancelling the causeway project as a decision as against going ahead with the plan was a unilateral one on the part of the Federal Government, particularly when it had been a project to which this and previous governments had been committed—and very much committed.

Mr. Laing: Well, of course it was a national undertaking—it was a Federal Government undertaking in which the Province was not sharing.

Mr. MacDonald (Egmont): No, but it obviously had greater impact on Prince Edward Island than any other province and the decision not to go ahead with it directly related to the expenditures of money within the Province of Prince Edward Island. So it cannot be said in any way to bear the same relationship to any of the other nine provinces that it directly bore to the Province of Prince Edward Island.

Mr. Laing: Well I am going to be bold enough—I know you will understand though I suspect you will not want to understand—

Mr. Whicher: We will all agree with that.

Mr. Laing: —to say that if you total those two sums and put it in a province with a population of 105 thousand you are going to have political problems. And I am not talking political parties at all—I am talking of reactions from other regions of the country who will say, “well now, what is the national government distributing in this particular area when they are putting all of this money in one place”. I think that the total of the two was a major factor—it was a factor. The Province of Prince Edward Island wanted the agreement and pressed us very heavily for it. I think that it would have been quite impossible for the government to do both. In addition to that at that time we were economizing and were cutting out projects of considerable size in other provinces. My own Province of British Columbia lost one project estimated at \$18 million at the same time. As a matter of fact we lost ours first, I think.

Mr. MacDonald (Egmont): That is right. I am not questioning the decision that was taken, I—

The Chairman: Mr. MacDonald, if I may interject here, we have a rule in this Committee that speakers will run ten minutes at a time and I let you go a little better than 15 because you are the initial questioner. Would you wind up with one more question and then I will go on to somebody else.

Mr. MacDonald (Egmont): Right.

If I may just say, Mr. Laing, with great respect, I do not think you answered my question. My question was simply this. In view of the importance of both of these items to the Province of Prince Edward Island—their fundamental importance—why was the Government of Prince Edward Island not involved in the decision as to priorities? It is even a little more strange when I think that this government has indicated that it wants to have people participate as widely as possible in decisions that affect them. I can say—and obviously I am not a member or a supporter of the present government—that I, as one Prince Edward Islander, felt that it was a very great slight to this Province.

Mr. Laing: Are you suggesting that we should have asked Prince Edward Island, "Which do you want?"

• 2055

Mr. MacDonald (Egmont): It does seem to me that not just "Which do you want?" but the problem of the moneys that were available, the question of this transportation link being important, even in the implementation of the plan, should have been thoroughly considered in consultation by both governments.

Mr. Laing: Well the overwhelming influence on the decision of the government was the fact that to proceed with the connection at this time would have drawn very very heavily upon our cash for the next four years at least.

Mr. MacDonald (Egmont): I am not rejecting that; in fact I have largely accepted the arguments that you have put forward on that.

Mr. Laing: And we remembered that we have a connection there at the present time by way of ferries. It may not be a modern service in the sense of getting these perishable products to market quickly but nevertheless it is a connection and a service that has

served the Island ever since it joined Confederation.

Mr. MacDonald (Egmont): I will pass for now but will come back later.

Mr. Whicher: Mr. Chairman, I am glad to be here tonight. I am not a member of this Committee but I am certainly interested in what is taking place.

I might say I do not blame Mr. MacDonald or any of the Prince Edward Island members for sticking up for the fact that in their opinion the causeway should have been constructed. I have been there, it is a lovely little Island, you will never find more hospitable people. But, quite frankly, Mr. Chairman, I could never understand why the causeway was promised in the first place, because there is only so much money to go around in this country. In years gone by I might add too, it has been promised, and I would not be one of those who would stick up for governments in the past who have promised it. Looking at it strictly from a financial and economic angle, I am very pleased as a citizen of Canada that the government in their wisdom turned it down and took the other alternative to, in their opinion, look after the Prince Edward Islanders.

However, Mr. Chairman, I am a bit worried about how much has already been spent on this project. What has been spent to date in planning and preparing designs for this project?

Mr. Laing: Mr. Williams will answer that question. I will warn you, it is a lot of money.

Mr. G. B. Williams (Senior Assistant Deputy Minister, Department of Public Works): The expenditures to April 30, 1969 are \$16.2 million.

Mr. Whicher: It is a good guess that in the next two or three years this project could not be gone ahead with, but suppose in the next ten years, as I presume Mr. MacDonald was hinting at, circumstances change—could these plans be used again, in your opinion?

Mr. Williams: Yes, substantial parts of them would be available. Out of the \$16.2 million \$5.5 million has been spent on construction. The portion on Prince Edward Island will be used in the ferry system. There will be some adjustments to it but it will be used in the ferry system in any case.

Mr. Whicher: In other words that \$5.5 million is not a waste.

Mr. Williams: Roughly \$4 million is of direct benefit in the use of the ferry system. With the present location of the terminal facilities, the New Brunswick portion will not be used.

If I could continue, sir. You mentioned the plans specifically. There was in connection with the development of this a great deal of research and investigation which is of general value to the engineering field to the Department of Transport, National Defence and others, and to engineering generally. I am referring to the ice studies, geological studies, material resources studies, and this information is available and is being used in the Atlantic region and will continue being used. So it is not lost.

In the matter of the plans, all of the information which has been collected, all of the designs which have been developed are being

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catalogued, cross-indexed and will be available. Talking in terms of ten years, I do not know, because there will be in that time engineering developments which will precede the solutions we now have. There will be solutions available ten years from now that are not available now. Some of the solutions that have gone into the design that was prepared for this are as the result of developments in marine drilling, oil drilling and this sort of thing and I am quite sure there will be further advancement. Ten years from now something else might prove to be a better solution than what we have.

Material costs will change and what is the best alternative now would not necessarily be the best alternative ten years from now because of the cost of materials. In our estimate, there is a value of \$2.5 million in these basic engineering studies.

Mr. Whicher: It was mentioned tonight that Colonel Churchill is still an employee of the Department of Public Works. How long will it take to close this thing out? The only reason I referred to his name is because it was mentioned that he still works for the Department. How long will it take to close out all these consultants?

Mr. Williams: It will take about another month and a half in the cataloguing and closing of the consultants' information. There are

some minor design elements which were at a stage that should be completed, otherwise we would lose the basic information, so it will take about another six weeks. There is some incomplete work on the Prince Edward Island approach-road, which also will take place this summer.

Mr. Laing: Mr. Chairman, might I add an additional word to that? Colonel Churchill was employed by the government to co-ordinate the engineering work which was being done by the Northumberland consultants, a consortium of engineering firms, and I want to pay this tribute to him. I think he did a tremendous job in bringing together, from all parts of the world, the best engineering knowledge that we now have. The Northumberland Strait is probably one of the most hazardous areas in which to work in Canada. Winds had been recorded up to 100 miles an hour. I think it is an area where there are occasionally 12 and 14 foot waves which create tempestuous seas, and they found it was underlain with mud-stone which makes difficult footings. I think they precluded the possibility of ever building a tunnel which was a dream that we had for many years. It has been an area which is fit to try the best engineering advice in the world today, and that was brought together by Colonel Churchill. They satisfied themselves and were prepared to consolidate their opinion with the government, that they could successfully build a bridge there. This is an achievement and much of the knowledge—which is modern and some of which will be, in principle, very useful in the future—has been compiled, and as Mr. Williams says has been thoroughly catalogued.

Mr. Whicher: Mr. Chairman, I should probably know this answer. How long would it have taken to construct this causeway? With all these engineering figures and this large amount of money, you must know that. I have one more question in connection with that. How long would it have lasted according to your engineers once it was completed? I presume it should last for 100 years or so but I do not know.

Mr. Williams: In terms of the construction period, we scheduled it over a period of six years. In terms of how long it would last, 100 years is as good a figure as any. In any of these projects, the structure rarely wears out.

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Maintenance keeps it going forever. The requirements change so you must have some-

thing to supplement it or change the design of it in order to fit the requirement. It is not the structure, itself, that wears out.

Mr. Whicher: Mr. Chairman, I have one observation and then I will pass. As I said at the start, I have every sympathy with the people from Prince Edward Island and the east. Certainly as a member from the area which I represent it would have been extremely hard to go home had the government decision been any other way, because as the Minister has said, these things have a tendency to bounce around. If we were going to spend a couple of hundred million dollars down there on a causeway I know, for a fact, that in areas such as I represent in rural Ontario and in many areas across Canada there would have been conflicts. The Treasury would have been asked for billions of dollars for projects here and there. Therefore, as much as I regret that this project was cancelled and with every sympathy to the people of Prince Edward Island, and looking at it from an economical and financial manner, I am glad that the government took their position. I hope that it is built some time in the future, but I also hope that no government promises it simply because it has been promised too many times in the past. I suggest that they start it before there are any promises in the future. Thank you, Mr. Chairman.

The Chairman: Mr. MacGuigan, and then Mr. MacLean.

Mr. MacGuigan: Mr. Chairman, I am pleased to be a member of the Committee for this evening to discuss this important problem concerning my native province. Mr. Minister, it seems to me a fair comment on your statement to say that the decision which was taken by the government was not taken on the merits of the question of constructing a causeway but rather on the question of priorities. I might say at this point that I thoroughly disagree with all the comments of my colleague, Mr. Whicher, except that I hope there will not be any more promises which the government later decides it can not carry out. It seems to me that on the merits of this very worthy project the government might have made a different type of decision, one which would not be quite so definitive as to practically eliminate the possibility of the causeway being built in the near future. I believe that the building of a causeway or a bridge in, say, the next 25 years across the Northumberland Strait is inevitable. I thought

that this would be expressly recognized in the government's statement that, given the question of priorities which the Minister has mentioned, the decision would have been that there would be a postponement rather than a decision not to proceed and that there might have been some construction work proceeding at a slower pace, at something less than the amount of money which would have been spent in each year of the six year period.

Mr. Laing: Mr. Chairman, in reply to Mr. MacGuigan's question in general. When you start a thing of this size you want to get it in operation at the earliest possible moment because the investment on your money, even your first portion is a considerable expenditure and to get any return on that money you must put it in operation at once. No single part of that causeway is of any use at all until it is totally finished. I would not want to see a project of that kind strung out over 10 or 12 years because that is eating its' heart out.

Mr. MacGuigan: It would cost more, but the fact is that it would be finished sooner that way than it is likely to be finished as a result of the decision which the government has now taken. That way it might be built in 12 years; this way it may be 15 or 20. If the cost is greater, then it would be a gradual cost on the year to year basis. I must say I was disappointed at the negative tone of the announcement that was made with regard to

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the causeway. I wonder if the Minister would care to say whether or not the government is prepared to live up to the responsibility which it assumed in the nineteenth century, with regard to transportation? I think that we must recognize that this must be put in a slightly different context. At that time, it was certainly not conceived in terms of the same type of rapid communication as today, but there was an undertaking to provide effective and continuous transportation. If the Island were allowed to develop to its full tourist potential, for example, it has been estimated that there would be something like eight times the present number of tourists. Is the government prepared to supply eight times the number of car ferries it now has? It now has four, I believe. Would it be prepared to supply 32 car ferries going across continuously, say, in the next ten years? If not, how does it propose to provide effective service to allow the development to continue? I am not

just concerned about its lagging behind the potential, which it has been doing, but to enable development to take place because I have been there when people have turned around and left the line because they were not going to wait any longer.

Mr. Laing: I have waited two and three quarter hours to get on the Island and three and a half hours to get off. The difficulty with a ferry service is, because of the nature of the tourist business, I think I am correct in saying, 72 per cent of the vehicles use the ferry service over a period of three months in the year. This is a difficulty of ferry services everywhere, if you have adequate accommodation for the summer bulge in traffic that you have to lay some ships up in the winter-time. This, of course, has had the effect of requiring the government to subsidize rather heavily the ferry service there, I think to the extent of about \$5 million a year. You are going to suggest to me that as the ferry service is bettered the subsidy will rise and I would have to agree with that, too. It is one of those things.

Because of the fact that I once had the parks in my Department I think I am aware of the potential of that area. We had, I think, attributed a million visitors last year to the parks, 1.2 million visitors to that park. It unquestionably has the best beaches in Canada and not all of them are developed yet. There are other beaches that can be developed there. I think probably the tourist business will receive a great deal of attention in the development work being undertaken.

The Chairman: Mr. MacLean?

Mr. MacLean: Mr. Chairman, I have tried to limit myself to three or four questions because I know that other members have questions to ask, but just to confirm what was said in the Minister's statement, am I correct in assuming that no reputable company or consortium have made an offer to construct a causeway or a similar structure without the government guarantee.

Mr. Laing: No, they all wanted government guarantees. It was my further thought that this was not a good way to do business even if you had total reliance on these firms because if an accident were to happen or they were to get into difficulties, whether financial or in an engineering sense, we would have had to bail them out. It would have been far better for us to accept full responsibility in-

stead of doing business that way. They did not appeal to us.

Mr. MacLean: With regard to the decision that the government had to make, admittedly it was a difficult one, and the amount of capital they could at this time spend in that area, what assurance did the government receive that the objectives of the economic development plan are for the most part achievable without a causeway? To clarify what I am asking, the view is strongly held in some quarters that the economic development plan cannot achieve anything like its full potential unless the transportation problem is solved first.

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Mr. Laing: I am told there was contact with the Department of Economic Development, and they were of the opinion that they could undertake and develop their plan and improve the economy there using a ferry service.

Mr. MacLean: As Mr. MacGuigan has said, we in Prince Edward Island hope that it will be realized that the finding of a permanent solution to the transportation problem there will become more and more pressing as time goes by because by trying to handle the traffic, which is growing rapidly, by ferries alone causes a general increase in cost. I presume one of the difficulties was not only the availability of capital but the cost of capital at the present time. I am about to ask a hypothetical question perhaps—I hope I will not be ruled out of order—but if money becomes available at a reasonable rate of interest, when in the judgment of the government would the present additional investments in ferries be depreciated to the point where a more permanent solution to the transportation problem there could again be rationally considered. How long, in other words, does the provision of extra ferries postpone the possibility of re-examining and, perhaps, proceeding with the causeway?

Mr. Laing: The difficulty of your argument is that the money for ferries comes from the same source as money for a bridge. If borrowing for one purpose becomes cheaper it becomes cheaper in all lines.

Mr. MacLean: Oh yes, I realize that.

Mr. Laing: I think you are discussing the operational cost of a ferry service as compared with a permanent bridge and a com-

parison of the services, one 24 hours a day and the other when the ferry lands.

Mr. MacLean: I do not think I have made myself quite clear. My question was, in the case of building a causeway the greatest cost involved is the cost of the capital investment; whereas with ferries a higher percentage of the cost is due to operating costs, but the government has decided not to proceed with the causeway at the present time and has made a considerable capital commitment with regard to additional ferries at the present time. That is comment, by the way. Proportionately the capital cost for the ferries is lower than the capital cost for a permanent causeway. My question is: as the government has made this decision, it is obvious that the ferries are not going to be scrapped next year or the next year and then the decision be reversed. My question is at what time in the future will it be considered that the present capital investment in the ferries will be depreciated to the point where consideration of an alternative service could again be made.

Mr. Laing: You are asking me to guess and I guess it would depend entirely on the rate at which productivity on the Island increases, be it industrial, agricultural or whatever.

Mr. MacLean: I will pass.

The Chairman: Mr. Gilbert?

Mr. Gilbert: Thank you, Mr. Chairman. I must preface my remarks by saying I am delighted to see so many Liberals here tonight, Mr. Chairman. It must have been that hard experience of the Newfie Bullet that has brought so many out tonight. My first question to you, Mr. Laing, is with respect to my noticing that the original estimate was \$150 million and in March of 1967 your first phase indicated an increase from \$25 million to \$43 million with a total cost to exceed \$300 million. Who made that first estimate of \$150 million?

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Mr. Williams: The \$150 million was developed by the consultant group who are still engaged on the project.

Mr. Gilbert: Then we will follow it to be second stage, Mr. Williams. Who made the estimate of the \$43 million as compared to the \$25 million?

Mr. Williams: Unfortunately, the \$43 million was the actual bid; the estimate was \$25

million. That was made by the same group of consultants.

Mr. Gilbert: Just how was that \$300 million arrived at, Mr. Williams?

Mr. Williams: If you take the same relationship of the elements that were in the first tender call to estimate; that is, the actual cost and the bid cost to the estimate, the project could have gone to \$325 million.

Mr. Gilbert: So it was based on that first phase?

Mr. Williams: Tender cost.

Mr. Gilbert: On the tender cost. Did the government do any estimating on this project?

Mr. Williams: Not independent of the consultants, no; the consultants had the basic information. They were collecting it at our request.

Mr. Gilbert: What reason would you have to believe that the projection would exceed \$300 million on the basis of the \$25 million to \$43 million?

Mr. Williams: It was done on the basis of an analysis. The first tender call involved the supply of rock, core fill, armour stone and certain concrete work. There was no structural work but there was a substantial concrete abutment which was related again to what would be the cost of bridge piers. We had estimates of steel; at that stage the design for the steel superstructure had not been completed, but it was based on a combination of a length of causeway and a length of bridge on the basis of which would cost the least, or, on the basis of the estimate of cost, which was the most economical combination. In looking at all the elements of it we did not know that it would cost \$325 million, but on the basis of that estimate and the tender price, it obviously was going to be substantially more than the \$150 million we had estimated. That is why a complete review was made of the project.

Mr. Gilbert: Let us get to the second phase of the figure of \$213 million. Just how was that figure, which was a review of alternatives, arrived at?

Mr. Williams: There was a complete review and the cost of the two mile causeway, for example, was established, or the cost of rock was established, so there was a complete

redesign on the basis of having more bridge. Colonel Churchill and the consultants investigated a number of different alternatives on how to design and particularly how to build the bridge piers which were perhaps the trickiest part of the operation.

In developing the estimate we also established that there was a considerable risk factor in the bids that resulted in the \$42 million for the causeway.

So, in addition to taking off quantities and estimating that way, we set up committees involving the construction industry and had their advice on every element of design that was proposed as to how it could be built, what would be their suggestions that from a construction standpoint a change in design would make it easier for them to build, and hence a cheaper price.

We brought in the insurance companies and the bonding companies to see if we could make some arrangements whereby there would be a shared risk arrangement to reduce premiums because the premiums for builder's risk in the Strait, on the basis of marine experience that was then current were almost prohibitive for the insurance we had asked

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for. We did a complete investigation of the risk factors the contractors were bidding and, to the degree we could, we arranged a shared risk between the government and who would be the bidder. In addition, we made substantial changes in the normal contract procedure whereby there would be advance payments in terms of immobilization costs, equipment costs, so that their financing would be substantially reduced.

On the basis of all this, we went back to the same contracting group, so the estimate of \$213 million is an estimate that has been put together, not only by our consultants, but by the contracting industry, the material suppliers, the bonding companies and the insurance companies.

Mr. Gilbert: The decision was reached on the basis of priorities of cash and the government decided to make the contribution to the development of the Island for greater opportunities and progress and so forth, and the amount is \$125 million over the next seven years. What conditions, if any, are attached to that sum of \$125 million?

Mr. Laing: That is not my Department. I know the outline of the agreement but I do not want to discuss the details.

The purpose is to revitalize the economy there and raise the productivity of the Island.

Mr. Gilbert: If I recall the statement of the Prime Minister in the House, Mr. Minister, I think that conditions were attached to this grant of \$125 million, and I would like to know just what conditions were attached. Does there have to be a participation —

Mr. Laing: Oh, yes, of course.

Mr. Gilbert: You have a knowledge of the agreement and I am sure it is a public document and that you would be prepared to summarize it for us.

Mr. Laing: Well, I do not want to; it is not my Department.

Mr. Gilbert: Whose department is it, Mr. Minister?

An hon. Member: It is not Public Works, Mr. Chairman.

Mr. Laing: Regional Development.

Mr. Gilbert: Thank you.

The Chairman: Mr. Orange.

Mr. Orange: Mr. Chairman, the Minister mentioned something with respect to what I would interpret as maintenance costs of the causeway once it was constructed. Has the Department, with their consultants, put together an estimate of what the maintenance on the causeway might have amounted to in any one year?

Mr. Laing: Yes, we have that. Mr. Williams will answer that.

Mr. Williams: \$800,000.

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Mr. Orange: In this respect, then, what will the additional cost of the increased ferry service be to the federal government?

Mr. Williams: I am sorry, I do not have the costs. The new ferry system was developed by the Department of Transport and they had made their forecast of the operation and the capital cost per year, which was the input to the over-all study of this project.

Mr. Orange: The Minister in his statement made reference to the development program

which was to be undertaken in the province for which the federal government will put up \$125 million in the next seven years and \$225 million over the 15-year duration of the plan. The Minister has indicated—and I think he is right—that he cannot comment on the participation of the provincial government in this respect, but I am wondering if he could indicate to the Committee what the increased productivity from such a plan will mean to the residents of Prince Edward Island?

Mr. Laing: No, I would not care to. I would be dealing with the proposals of another department and another minister and I would hope not to invade his territory or invade the territory of that department. It is a program in the hands of another minister entirely. However, projections have been made as you know.

Mr. Orange: Would it be reasonable to ask you, Mr. Minister, the Cabinet having made this decision with regard to this program for the Island, whether there will be a substantial increase in productivity with a resulting increase in the standard of living on Prince Edward Island?

Mr. Laing: That is to be hoped for, of course. We have mentioned tourism on the Island and I think it has an immense potential, but the Island is principally an agricultural island at the present time. It has drawbacks. Those who come from the Island will not mind my saying this. Apparently it has no minerals, and I think in some areas rock is difficult for road construction, and so on. So you are down to an agricultural island with a tremendous potential for tourism, in my view. I would expect that both of those could be developed quite measurably.

Mr. Orange: Mr. Chairman, I will pass for the moment. There are others who wish to speak.

The Chairman: Mr. McQuaid.

Mr. McQuaid: Thank you, Mr. Chairman. Mr. Williams, you said during the course of your evidence that sometime subsequent to March, 1967 the figure of \$213 million was arrived at as a possible cost of constructing the causeway. Have you any information tonight of just when this figure was arrived at? Do you know when that estimate was submitted?

Mr. Williams: August, 1968.

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Mr. McQuaid: August, 1968. Then Mr. Minister, my next question is to you. On Friday, October 4, 1968, you are reported by the Canadian Press to have said in an interview in British Columbia that the latest estimate you had of the cost is \$125 million, "not in the range of \$300 million that is now being bandied about." Did you make that statement? Do you remember?

Mr. Laing: I could not have made that statement because I never dealt in the \$125 million. I knew all along it was more than that. The lowest figure that I ever heard was \$160 million to complete. This was in addition

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to the money that we had expended. I cannot remember having made a statement in British Columbia on the subject.

Mr. McQuaid: I am just reading from a Canadian Press report.

Mr. Laing: What is the date of that CP report?

Mr. McQuaid: Friday, October 4, 1968.

Mr. Laing: Thank you.

Mr. McQuaid: I just have one more question, Mr. Minister. A couple of days ago it was stated in the Prince Edward Island legislature by the Minister of Municipal Affairs, and I read from the press report:

The construction of a causeway for Prince Edward Island is not beyond the realm of possibility...

He disclosed that a dozen enterprises were interested in the causeway project.

Are we safe in concluding from what you told us tonight in your previous evidence that the government is not interested in the proposals that have been submitted to it so far by those dozen private enterprises that the Minister of Municipal Affairs mentions?

Mr. Laing: I would not recommend any that have been suggested to us thus far. No.

Mr. McQuaid: So we would conclude that any that have been suggested by you so far would definitely be turned down by the government?

Mr. Laing: I am sure they would.

Mr. McQuaid: Thank you, Mr. Chairman.

Mr. Laing: I do not know where he got a dozen people.

Mr. McQuaid: It says:

He disclosed that a dozen enterprises were interested in the causeway project.

Mr. Laing: Using that terminology, the consortium comprised how many people—8 or 10 firms, or people that were consulted, and so on? Of course, they were all interested in building because they wanted work. Whether he is talking about them or not I do not know. We had only two submissions to the government, neither of which we would have recommended.

Mr. McQuaid: That is all, Mr. Chairman, thank you.

The Chairman: Mr. Hymmen.

Mr. Hymmen: Mr. Chairman, I have a couple of questions. I have a supplementary, but since we are not allowed supplementaries on the first round this has to do with Mr. MacDonald's questioning. You mentioned several times that this was a unilateral decision. This may well be and I can realize the interest of Premier Campbell in this meeting tonight. This may be an unfair question to ask the Minister. I realize there was a great deal of discussion between the Premier of Prince Edward Island and another ministry. To the best of your knowledge was Premier Campbell ever given any cause to hope that the causeway could proceed at the present time in addition to the economic development scheme?

Mr. Laing: I think that Premier Campbell wanted both, and if I had been Premier Campbell I might have, too.

Mr. Hymmen: Thank you. How many ferries are there?

Mr. Laing: All three of us are of the opinion there are four.

Mr. MacDonald (Egmont): Perhaps I could clarify this because I feel it is important. There are four on the CNR run, but there are two which operate at Wood Island which are also subsidized by the federal government.

Mr. Laing: Yes, but privately operated.

Mr. MacDonald (Egmont): Privately operated but federally subsidized. Right.

Mr. Hymmen: Perhaps I should ask this of Mr. MacDonald. Is the Northumberland Strait completely closed in the winter time? Do any of these ferries operate in the winter time?

Mr. MacDonald (Egmont): Yes, there have been two. One very old one has just been replaced and there will be two as of this year—the new one which cost, I think, \$14 million and the other one which has been in operation for a little over 20 years.

The Chairman: I think in order of preference, Mr. Hymmen, in all fairness you should give the Minister and his officials a first chance.

Mr. Hymmen: In the Minister's statement he mentions the considered importance of the causeway in order to provide improved rail service for freight, but under the \$213 million scheme I understand that rail would still be

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carried by ferry. I also realize that with the causeway and the bridge, probably some truck transport could go over the causeway, but I would imagine, and I assume I am correct, that a great deal of the freight which could be important to the economy of Prince Edward Island, and their agricultural production would be carried by ferry. Therefore, even if the \$213 million scheme were implemented—and I am not trying to answer my own question—would the majority of the freight traffic still be carried by a ferry?

Mr. Laing: Yes, that is correct. Envisioned here was maintenance of the ferry service on a barge—on a rail ferry. We have a rail barge. We call them barges in British Columbia. In addition to that, of course, the idea was that there would be a much improved road service on the Island, and I think this is probably contemplated in the development program.

Mr. Hymmen: I have a further question on alternate designs. The Minister has already mentioned that because of the nature of the Northumberland Strait the tunnel was out of the question, and probably more difficult to build than the tunnel to Newfoundland. Was an estimate ever made of a combined rail and highway bridge, or causeway?

Mr. Williams: Yes, there was.

Mr. Hymmen: And what would that cost?

Mr. Williams: As I recall—and I am reaching a bit for this one—the rail portion of it added roughly \$86 million to the highway bridge alone.

Mr. Hymmen: We will be safe and add \$100 million.

Mr. Williams: You spoke of the tunnel. In all of the estimating what was done the investigation was carried on and the estimating done to the point at which it got beyond an economic limit, or there was an alternative that was cheaper, and at that point it was dropped. Therefore, the idea of having a shuttle service and a full tunnel was dropped relatively early on because of costs created by rock conditions. The incremental costs of putting rail on with the highway at that level was not warranted. We therefore did not go into the same detail of estimate as was done on the \$213 million for the highway.

Mr. Hymmen: I come now to the third part of my question. We realize that hovercraft could not operate in the wintertime, but could they be used in the future to supplement the ferry service for tourist traffic in the summertime?

Mr. Williams: Yes, the possibility of hovercraft was studied, but in terms of cost per pound, or ton, or anything like that, it was at the present time totally uneconomical. But that does not preclude the development of hovercraft and it being a supplemental type of service to the ferry service.

Mr. Laing: I might say that in my view the hovercraft is a magnificent machine and a tremendous new idea, but hovercraft, as they exist today, rely upon the highest value freight and full occupancy. The highest class freight is human beings. The cost of the hovercraft of the size that is running across the Channel today is 38 cents a ton mile.

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Against that, we have planes moving into the north today on contract and moving a great deal of freight down to Panarctic at 6½ cents a ton mile and making money; so that the hovercraft is still a high cost machine.

Mr. Hymmen: Thank you, Mr. Chairman.

The Chairman: Mr. Whiting?

Mr. Whiting: On your estimate of \$213 million, could you tell me the status of the design and contract documents? Is it pretty well designed—the \$213 million estimate?

Mr. Williams: In terms of the design principles, the design is selected on each element. In relation to the final design drawings, and so on, we are down to 30 per cent on the steel superstructure; 50 per cent on the concrete;

25 per cent on the substructure; 100 per cent on the causeway approach portion; and there is 85 per cent on the approach roads.

Mr. Whiting: And is that included in the \$16.2 million that is already...

Mr. Williams: That was to April 30, 1969; so yes, the big bulk of it is in there.

Mr. Whiting: How far did you go on the \$2.5 million you spent in basic engineering studies?

Mr. Williams: The type of thing that was studied, that is covered in what I referred to, we estimate as being in basic value something like \$2.5 million. A very thorough and comprehensive ice report was prepared by internationally respected and knowledgeable people in the ice field. That report is available and will be published and made available internationally, because it does summarize, and bring forward, some new ideas in the design of structures that have to resist ice.

I mentioned the sort of material assessment that had been done. We have a very complete record of available quarries and classifications of quarries that will apply down through Nova Scotia and New Brunswick; P.E.I. was pretty well written off in terms of quarry material, but there is still a substantial amount of investigation. That is available and will be used, and is being used now, in consideration of engineering projects throughout the Atlantic region.

Similarly, wave studies were made—and this applies to the ice studies as well—and there are combinations of model studies, as well as basic analysis of all the research work that was available to us at the time; and, carrying on from those, an outstanding study in wave motion and of the design to protect against it. That is being used by the Department and by other departments, and will be used internationally.

That is in the basic engineering field, but there was also some basic work done in terms of contract procedures. There was a substantial amount of work done, with the co-operation of the provinces and the federal Department of Labour, on labour conditions for contracts and means of developing a labour situation on major projects so that you do not upset the labour conditions in the adjacent territory, and yet, on the other hand, will allow you have a continuous labour-management function that permits you to do these major contracts without being tied up.

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Similarly we did a very comprehensive study in marine safety codes. One was developed because we needed it for this project, but we feel it will be the model and will be adopted for a marine safety code for Canada. There is an interest in this—we already are aware of it—from the U.S. government.

Mr. Whiting: Very early in your engineering studies, then, you found that you did not have enough suitable rock to follow the proposal developed by Mr. McCullough? Is that correct?

Mr. Williams: That is correct, yes.

Mr. Whiting: If there had been an ample supply of rock, then what would have been the cost on the McCullough proposal? Can you give me an idea of what that would be?

Mr. Williams: It would have been a more attractive alternative to look at had there been ample rock; however, it would have caused some hazards in a full causeway: it would have closed off the strait totally, and by closing off the strait you would change the tidal wave, and current through the full length of Northumberland Strait. This would bring about some other problems; therefore, in assessing this—and it was done early on—it was felt that a better solution, both on the basis of engineering cost and in maintaining the status quo of water levels and currents in the Northumberland Strait, would be to maintain the minimum cross section; thirty-five per cent of the cross section had to be open or else a substantial change in the tidal and wave regime in the strait would occur.

Mr. Whiting: Why did you go ahead and spend \$5.5 million on the ferry service? Did I copy that down correctly?

Mr. Williams: No, that was on approach roads.

Mr. Whiting: Oh.

Mr. MacDonald (Egmont): I will try to clarify this. I think that you referred to these approach roads now being used as feeders to the car ferries, particularly on the Prince Edward Island side.

Mr. Williams: That is correct. They will be used by the ferry service. However, when they were commissioned, it was with the idea that we were proceeding with the building of the permanent crossing.

Mr. Laing: The investment on Prince Edward Island will be valuable because the ferry service will continue to use it. The investment on New Brunswick will not be used.

Mr. Whiting: What was the investment on New Brunswick?

Mr. Laing: It was \$2.2 million.

Mr. Whiting: That will not be used.

Mr. Williams: No, it will not be used. It takes off from the highway at a point before the ferry approach; the take-off point for the causeway and the ferry terminal were not continuous on the New Brunswick side.

Mr. Whiting: Why would you go ahead and sink \$2.2 million into something that you were not sure of at that time?

Mr. Williams: At that stage we thought we could build the causeway.

Mr. Whiting: Yes, but you did not have the final figures, did you?

Mr. Williams: We had a design and an estimate at that time of \$150 million; it was not until we called the first causeway tender that we realized how much risk was involved and what kind of a premium price we were paying for.

Mr. Laing: You must remember that at that time a decision had been taken to proceed; the railway and a road were built down there to accommodate the furtherance of this work. The first contract that was called was estimated at \$25 million; as it turned out, the lowest bid was \$43 million. At this point the government decided that a total review had to be taken. However, before the investment was made in the approaches, a decision had been taken to proceed. It had been decided that a crossing was feasible and that we would build it.

• 2155

Mr. Whiting: It was mentioned that you now have a total of six ferries. How many are you going to add to the ferry service?

Mr. Williams: There is one new one in and one that is retired. There is another one on order. I am sorry but I do not have the details on the DOT ferry program.

Mr. MacDonald (Egmont): A steamship is being renovated; I think it will cost about a

half a million dollars and will carry the weight of approximately 100 cars.

Mr. Whiting: Will that cut down the wait that people have at the present time?

Mr. Williams: Yes, the program worked out by the Department of Transport on the ferry system is based on traffic projections. Taking into account the development program that is planned for the Island, the maximum period of waiting was calculated at 30 minutes, I believe. This is the desired period of time. They will be building but it will depend largely on the traffic projections. They will have to utilize more ferries as the traffic projections are developed.

The Chairman: Mr. Whiting, your time is up. Would you wind it up with one more question please?

Mr. Whiting: All right. How many people are employed on the six ferries that are now running?

Mr. Williams: I am sorry, I do not know. I would like to clarify the positioning of the six ferries: there are two ferries on the Wood Island Caribou service, which starts at the other end of the Island. The other four ferries are operating from Cape Tormentine to Port Borden, which is where the causeway would go.

Mr. Whiting: You do not know how many are employed on those four ferries.

Mr. Williams: No, I am sorry.

Mr. MacDonald (Egmont): About 800 people will be employed on the four ferries operated by the CNR; I would think at least 250 people will be employed by the other ferry systems.

The Chairman: Are you finished, Mr. Whiting? We have to spare a few moments here for a final discussion of this anyway.

I quoted at the beginning Beauchesne's Fourth Edition, 304 (1) and (2), as well as a second reference, May's 17th Edition, pages 641 and 643. Would members of the Committee like to hear these? If not I will just leave it. The other reference is Bourinot, pages 469 and 470, which in effect says the same thing as 304 (1) and (2). As Chairman, I find myself bound by these rules and far be it for me to go outside of them.

Mr. McQuaid: Mr. Chairman, may I ask a question on that point? Is Colonel Churchill in the employ of the Department of Public

Works? If he is, then his salary is a matter for the Estimates and since the Estimates are before the House, we are not disturbing any of the rulings that you have read about asking Colonel Churchill to appear before the Committee—but I am not sure if he is in the employ of the Department.

Mr. Laing: Yes, he is.

Mr. McQuaid: Then his salary, I presume, is provided for in the Estimates that we are now considering.

Mr. Laing: Colonel Churchill was employed by the government and charged with coordinating the work of the consultants. He has done a very good job.

• 2200

Mr. McQuaid: Mr. Chairman, if Colonel Churchill's salary is provided for in the Estimates, then I am suggesting that perhaps he would be a competent witness.

Mr. Laing: Yes, his salary is in our vote.

Mr. Gilbert: Mr. Chairman, that being so, I move that Colonel Churchill be called to the Committee at the request of the Minister to act as one of his officials; the members of the Committee could then ask questions of him through the Minister.

The Chairman: We have a motion before the Committee. Mr. Mahoney, do you wish to speak on it?

Mr. Mahoney: I am wondering how much more time this Committee wishes to spend covering ground that has already been explored by the Standing Committee on Transport, including trips to the Maritime Provinces this year and a full day of hearings in Charlottetown pretty well devoted to this entire problem. The report of that Committee is going to be coming out within the next few days. Frankly, I wonder how much time this Committee wants to spend going over this particular ground. It strikes me that we should perhaps deal with the estimates of the Department of Public Works and more or less get on with the business before us.

The Chairman: Mr. MacDonald, and then I will recognize Mr. Cullen and Mr. Chappell.

Mr. MacDonald (Egmont): Mr. Chairman, I think that Mr. Mahoney has raised a good point. Perhaps it has another side to it that he did not mention. The very fact that the

Transport Committee made its tour into eastern Canada was, of course, to deal with many of the difficult transportation problems of the Atlantic region. As he said, a good deal of time was spent in discussing this particular item. I think it was unfortunate that before the Committee was able to make its report, the decision was announced by the government. But putting that to one side, it does seem to me that one of the main functions of the parliamentary committees, particularly in this Parliament, has been the full discussion of major questions that affect the country in one sector or the other. And inasmuch as not only one government but a series of governments over a period of 13 years, as the Minister has indicated, have been involved with this project, involved to the extent of spending more than \$16 million—and we have spent a lot more time dealing with items that have warranted a lot less expenditure—I think it is important. Not just important to warm old soup, because there would perhaps in the long run be little usefulness in that, but I think we have discovered here this evening, through the testimony that has been given and the questioning, that there are some basic questions here that are very important for the future, and I think that is primarily what we are all interested in. As I think questioners on both sides of the table have indicated, this is an important project and I think the Minister in his own statement has certainly left ample opportunity for this project not to be considered a dead issue. And I would think that since very shortly obviously Colonel Churchill will be going on to other responsibilities, while he is in the process of winding up the two years that he has spent specifically engaged in a project which the Minister has commended him for and indicated that he has entered into the widest possible kind of consultation and accumulation of information, I think as members of this Committee—perhaps I should speak only as a visitor and not as a regular member—we would miss a very great opportunity to have in the record of this Committee the kind of testimony that Colonel Churchill could give to us. As the Minister and the Deputy Minister suggest, not only has the project today been valuable in itself but also the fallout—if I may use that term—for a variety of other things the Department will be considering in the years ahead is very important. I think considering those two fronts—one the future liability of the Northumberland Strait crossing and secondly the learnings

that have been gleaned from this experience—I would hope the Committee would not feel inclined not to consider this further, at least with Colonel Churchill, because I feel that he has been an outstanding man in many ways and has devoted his time in the last two years to this project and it is my understanding that he will be quite willing and indeed anxious to appear before the Committee. I do not like to thrash old straw, but if I may repeat, we have had a direct request from the government of a province of this country unable to call Colonel Churchill because of his engagement to the federal government asking that he be allowed to appear before our Committee. For these reasons I would

• 2205

hope that we could see our way clear to giving Colonel Churchill the opportunity that I think he deserves and that I think we deserve to hear him.

The Chairman: Mr. Cullen.

Mr. Cullen: Mr. Chairman, I spoke earlier in connection with having Colonel Churchill appear because I did not know exactly what the gist of the Minister's remarks would be, but as I see the position now, it is strictly a question of cost. I think if the Minister and his officials had said that this was not technically or in an engineering sense feasible, there would have been some merit in calling Colonel Churchill. When the Minister mentioned that this was not economically feasible, I think Mr. MacDonald—and you can check the record next time—said, "I am not rejecting; I accept that." It seems to me strictly a policy decision. It is a question of money and the money is not available. We have not said that it is not technically or in an engineering sense possible. We simply said we just cannot afford it. Having all the best expert evidence in the world that we can build it I do not think is going to change the opinion of the Department. I think we would just be wasting our time in calling Colonel Churchill. I admire the Department in that they have not held out the false hope that my colleague, Mr. MacGuigan, suggests—possibly in the future—and leave them hanging with a carrot dangling in front of their noses. The situation is that this is killed for the time being and let us not hold out any false hopes. And frankly, at this stage of the game, I cannot see any merit in calling Colonel Churchill if his evidence is going to be strictly technical. He can

hardly discuss or persuade us on a policy aspect. I think we have had adequate coverage of that field and I think we would be wasting the Committee's time.

The Chairman: Mr. Chappell.

Mr. Chappell: May I ask a question first? Will we be continuing on this subject the next day?

The Chairman: I still have Mr. Cullen, Mr. Chappell...

Mr. Cullen: I pass. My three questions were asked, Mr. Chairman.

The Chairman: ...Mr. MacDonald and Mr. Pringle left on the list.

Mr. Chappell: I find it difficult to make up my mind whether I would like to hear Colonel Churchill until I have had some questions answered, and I expect other members of this Committee might very well feel the same way. I am anxious to get some costs from some person in this Department and the transport figures so that I can weigh for myself what a balance sheet might look like in six years—the time the bridge would be built. It may be that I can get those figures from the Department, but if not I would like to hear Colonel Churchill. So I find it difficult to make that decision so that I can vote on that tonight until the questioning has been completed. At the moment I cannot see anything wrong with the motion. I do not see why we should oppose it unless there is some great difficulty in getting him here.

The Chairman: If I might make a comment on one of your suggestions, Mr. Chappell, anything dealing with the Department of Transport cannot in effect be heard before this Committee.

Mr. Chappell: I would like to know how in the world they will know what the costs are going to be in future if Transport has some of the costs and they do not have them. I do not know how anybody could possibly make the decision of what the costs are going to be in the future.

The Chairman: Mr. MacGuigan, you had a comment to make.

Mr. MacGuigan: Mr. Chairman, I wanted to make an addendum to Mr. Cullen's statement lest what I had said earlier might be misunderstood. I was not suggesting that the

Department should have held out false hopes to the people of Prince Edward Island. I was suggesting that they would hold out genuine hope and not hold out the carrot but give them the carrot, in other words. I would like to go on to say that while I do agree with the reasoning of the rest of Mr. Cullen's statement, I think another factor to be considered is that the people of Prince Edward Island have not seen justice to be done even if in the minds of some here justice has been done, and especially if they have not been able to call Colonel Churchill before them. I think that there is a strong argument to be made for calling Colonel Churchill here because it is going to be felt as discriminatory, whether or not it is in fact discriminatory. And I would suggest on this basis, even if the reasons are as Mr. Cullen has suggested, it is best to err on the side of hearing too many witnesses than hearing too few.

The Chairman: Mr. Orange.

Mr. Orange: I would like to bring up a small logistical problem here. I understand

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we must return the estimates to the House of Commons by the end of this week. We have a number of outstanding items, particularly in the Department of Energy, Mines and Resources, completion of the National Energy Board's estimates, completion of Item 1 of the Department of Public Works and also, as I said earlier, the logistical problem of arranging to bring someone such as Colonel Churchill and also setting up a particular meeting. I think it becomes a matter of establishing priorities in the minds of the members of the Committee as to where we go from here. Those of us who have been on the Committee for this period of time I think may want to discuss other matters which have been before the Committee which we have not concluded, such as the National Energy Board, Item 1 of the Department of Public Works, the estimates of the Department of Energy, Mines and Resources, not the least of which is water and water pollution.

The Chairman: Mr. Langlois.

Mr. Langlois: Mr. Chairman, may I at this time make the suggestion that you convene a meeting of the steering committee tomorrow to find out what the people around the table think and to bring a report to the Standing

Committee at its next meeting, at which time the Committee can adopt it or reject it. That is the usual way to proceed, I think.

The Chairman: Gentlemen, I thank you for your advice in this matter. I hope that I can arrive at a wise decision. I am advised that having quoted these rules from Beauchesne, May's and Bourinot any motion at this time, such as Mr. Gilbert's, cannot be put but a motion can be sent to the Committee to overrule my decision. Having ruled out Mr. Gilbert's motion on those grounds, I wonder if the Committee would be content to let us take it into a steering committee meeting in the morning and bring it back into the next meeting.

Mr. Gilbert: When is the next meeting?

The Chairman: I was hoping that we could continue tomorrow morning but I can not do it without consulting the Minister. We have a cancellation at 9:30 in the morning, but because we have to have a steering committee I suggest that that is out. We do have a meeting lined up for Wednesday afternoon on Energy, Mines and Resources and possibly we could fit the next meeting into that one, unless we can arrange an emergent meeting tomorrow. Is the Committee prepared to go along with the suggestion that the Steering Committee meet tomorrow morning and that we try to arrange an emergent meeting later tomorrow?

Mr. Laing: Mr. Chairman, if it is decided that Colonel Churchill is wanted here, I ask that you give us at least a day in order to get him. He is now in Montreal and I want to be fair to him.

Mr. MacDonald (Lisgar): I think some of the Committee would like more than a day because, as you are aware Mr. Chairman, I have a number of obligations running over the next few days. I certainly would like to be here at the time of Colonel Churchill's appearance.

The Chairman: I would like to remind the Committee at this time that the Estimates must be back in the House not later than the end of this month. The hearing must take place soon. In any event, are you prepared at this time to hand it over to the steering committee for tomorrow morning? We will come up with what we hope will be a reasonable suggestion.

Mr. Chappell: Are you asking that we leave the whole decision to the steering committee or...?

The Chairman: The steering committee report will be returned to this meeting in the normal way. Agreed?

Some hon. Members: Agreed.

Mr. Chappell: Mr. Chairman, may I ask something else which might save some time? You said you cannot produce the Transport Estimates, but I find it impossible to make the decision...

• 2215

The Chairman: I do not want you to take that too literally, Mr. Chappell.

Mr. Chappell: The point is how can I tell what it will cost if the ferries cost, for example \$50 million a year? That is a very important consideration, and I am wondering if those figures can be obtained from Transport so we can try to draw a type of balance sheet in six years.

The Chairman: I am still advised that this is Public Works. We can possibly use figures which have already been made public, but we cannot go ahead and...

Mr. Mahoney: Would it help Mr. Chappell by referring him to page 1403 to 1406 inclusive of the Proceedings of the Transport Committee for the current year? It is ground that has been well plowed.

Mr. Chappell: Thank you Mr. Mahoney.

Mr. MacDonald (Lisgar): I have a comment. I do not want to divert the Committee from hearing Colonel Churchill in the near future. This evening I did not get into the kind of material and the various studies which are presently available. I do not want Mr. Cullen to think that the total amount of the questions which I would even have asked the Minister are the ones that I was able to ask at the beginning, because I have a number here. I really avoided getting into some of the various reports and surveys that were commissioned by the government since 1967 in order to establish various things such as cost benefit.

I realize that the Committee is working under a time-bind. Mr. Orange has mentioned a number of important issues with which the Committee is charged. If it becomes difficult,

if not impossible, to have Colonel Churchill before the end of this month, I hope that the steering committee and the main Committee would give considerations, perhaps in its report back to the House on Estimates and request that permission be granted at some point in the next period to deal specifically with this matter. At that time, we would be free to have someone from Northumberland Consultants Limited. I think that if Mr. Chappell is concerned about having all the information necessary in order to know whether or not the cost benefit figures would justify the continuation or the expansion of the ferry system we would have to have this kind of hearing. I raised that only as an alternate plan for the moment, because it seems to me that the primary concern at this point is the hearing of Colonel Churchill as a witness.

The Chairman: Thank you. Time is going on, Mr. Marchand.

Mr. Marchand (Kamloops-Cariboo): I just have one question. Could we not ask the House to refer the Annual Report to us, and call witnesses later on as the House proceeds? We do not necessarily have to call Colonel Churchill before the Committee during a discussion of Estimates. Is this not correct?

The Chairman: The steering committee will take these comments under advisement. We will meet tomorrow morning or, since you suggest that we leave at least a day, tomorrow afternoon if members cannot collect in the morning. Thank you, gentlemen. The meeting is adjourned.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

ON

NATIONAL RESOURCES
AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 25

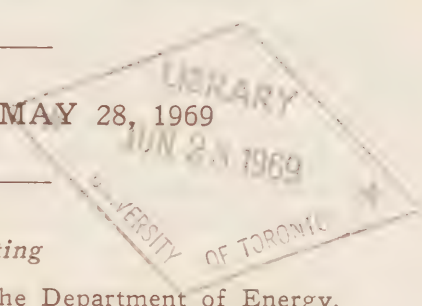
WEDNESDAY, MAY 28, 1969

Respecting

Main Estimates (1969-70) of the Department of Energy,
Mines and Resources

WITNESSES:

(See Minutes of Proceedings)



STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and Messrs.

Beaudoin,	Forrestall,	Marchand (<i>Kamloops-</i>
Chappell,	Gilbert,	<i>Cariboo</i>),
² Code,	Harding,	Ritchie,
Comeau,	¹ Hees,	⁶ Roy (<i>Timmins</i>)
⁷ Deakon,	Langlois,	³ Schumacher,
⁵ Duquet,	Mahoney,	⁴ Sullivan,
		⁸ Whiting—(20).

(Quorum 11)

Timothy D. Ray,

Clerk of the Committee, pro tem.

Pursuant to Standing Order 65(4)(b),

¹ Mr. Hees replaced Mr. McQuaid on May 28, 1969.

² Mr. Code replaced Mr. Macquarrie on May 28, 1969.

³ Mr. Schumacher replaced Mr. MacDonald (*Egmont*) on May 28, 1969.

⁴ Mr. Sullivan replaced Mr. Whicher on May 28, 1969.

⁵ Mr. Duquet replaced Mr. Barrett on May 28, 1969.

⁶ Mr. Roy (*Timmins*) replaced Mr. Breau on May 28, 1969.

⁷ Mr. Deakon replaced Mr. MacGuigan on May 28, 1969.

⁸ Mr. Whiting replaced Mr. Cullen on May 28, 1969.

MINUTES OF PROCEEDINGS

WEDNESDAY, May 28, 1969.

(25)

The Standing Committee on National Resources and Public Works met this day at 3:40 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Beaudoin, Comeau, Deakon, Duquet, Harding, Hees, Hopkins, Hymmen, Langlois, Mahoney, Marchand (*Kamloops-Cariboo*), Roy (*Timmins*), Schumacher, Sullivan, Whiting—(15).

Member also present: Mr. Barrett.

Witnesses: From the Department of Energy, Mines and Resources: The Honourable Otto Lang, Minister; Mr. R. P. Howland, Chairman of the National Energy Board; and Dr. C. M. Isbister, Deputy Minister.

The Chairman read the Report of the Subcommittee on Agenda and Procedure as follows:

May 27, 1969

REPORT TO THE COMMITTEE

Your Subcommittee on Agenda and Procedure met this day at 4:00 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Beaudoin, Comeau, Harding, Hopkins, Hymmen and Langlois.

Your Subcommittee discussed the matter of calling Colonel Churchill before the completion of the consideration of the estimates.

Your Subcommittee recommends:

1. That Wednesday, May 28, 1969, at 3:30 p.m., the Committee proceed to the consideration of Item 80 of the Estimates of the Department of Energy, Mines and Resources, the National Energy Board, and then to the consideration of Item 1 of those estimates, during which time the Minister will be in attendance;
2. That during the consideration of Vote 1 and Vote 80 of the Energy Estimates, each member be limited to five (5) minutes during questioning;
3. That at the completion of the estimates today, the Committee go *in camera* to begin a draft report and that the members be limited to three (3) minutes during discussion of the draft report;
4. That the Committee meet at 9:30 a.m. Thursday, *in camera*, to consider drafting a report to the House on the Estimates;
5. That the Committee meet Thursday evening from 8:00 p.m. until 9:45 p.m. to finish Item 1 of the Public Works Estimates—P.E.I. Causeway; at this time the Minister of Public Works and his officials are to be present, his officials to include Colonel Churchill;

6. That at this Thursday evening meeting, each member be limited to eight (8) minutes during questioning;
7. That at 9:45 p.m. Thursday, May 29, the Committee go *in camera* to finish the report on the Estimates.

Respectfully submitted,

LEONARD HOPKINS,
Chairman.

On motion of Mr. Harding, it was

Resolved,—That the Report of the Subcommittee on Agenda and Procedure be concurred in.

The Chairman called Item 80 of the Energy, Mines and Resources Estimates and introduced Mr. Howland.

Following questioning by the Committee, the Chairman thanked Mr. Howland.

It was,

Agreed,—That Item 80 of the Energy, Mines and Resources Estimates carry.

The Chairman then called Item 1 of the Energy, Mines and Resources Estimates and introduced the Minister and invited him to introduce his officials.

The Minister and his officials were then questioned by the Committee, following which, the Chairman thanked them for their attendance and it was,

Agreed,—That Item 1 of the Energy, Mines and Resources Estimates carry.

At 5.25 p.m. the Committee adjourned.

Timothy D. Ray,
Clerk of the Committee, pro tem.

EVIDENCE

(Recorded by Electronic Apparatus)

Wednesday, May 28, 1969

• 1541

The Chairman: Gentlemen, we have a quorum and I would like to call the meeting to order. As you recall, last day we ended the meeting by passing over the procedure of this meeting and others to follow to the steering committee. I want to say that your steering committee met yesterday at 4 o'clock on Agenda and Procedure with your Chairman presiding, and these members present: Messrs. Beaudoin, Comeau, Harding, Hymmen and Langlois. After an hour and a half's discussion, we were cut short by the bell which called us to the House for a vote. We returned to our meeting again at 9 o'clock last night and completed it. I want to thank all the members of the steering committee for the very frank discussion we had because I think we have come up with an excellent solution for the duration of the hearing of the Estimates.

I have the honour to present the Report of the Steering Committee.

(See Minutes of Proceedings)

• 1545

The Chairman: Today we will begin, once again, by calling Vote 80 of the Estimates of the Department of Energy, Mines and Resources, namely the National Energy Board. I would like to introduce Dr. Howland, Chairman of the National Energy Board, and the Honourable Otto Lang, Minister of Energy, Mines and Resources. Mr. Howland informs me that he has no opening remarks because he has appeared before this Committee previously. I am now in a position to accept names of those members who wish to ask questions. Mr. Harding.

Mr. Harding: Mr. Chairman, we are limited to five minutes?

The Chairman: Before you proceed Mr. Harding I might say that in order to get through these two votes this afternoon, I am going to be very exacting on the time. Do not

consider it an insult if I chop you off suddenly, as it is a case of getting the business done. Thank you, Mr. Harding.

Mr. Harding: Thank you, Mr. Chairman. I must leave a little early. I would like to ask a question or two about oil pipe lines. I understand that when the Borden Commission on Energy investigated the cost of an oil pipe line to Montreal, that no actual surveys were made to see if the costs had changed, but that the Department has kept in touch with the costs. Is there any hope of being able to move Alberta oil, or oil from the West, into the Montreal market instead of having it come in from Venezuela by ship?

Dr. R. D. Howland (Chairman, National Energy Board): In very broad terms, Mr. Harding, the Board always has an interest in seeing that the Canadian industry maximizes its potential supply of Canadian markets.

Mr. Harding: How do you check the costs of moving by pipe line versus ship or tanker transportation?

Dr. Howland: We are in touch, Mr. Harding, with all of the developments in the trade. We have very considerable knowledge which we can augment by published figures of inter-scale tanker availability. These are published figures which tell us the going-rate of different tankers, and we are quite familiar with and do keep abreast of them. In the course of our own work with the Energy Board, in approving construction of new lines and also watching the tolls and tariffs of oil and pipe lines, we know the extent to which the differential might change from the advantage that is normally associated with tanker as against pipe line movements. We would know if there were a significant change.

• 1550

Mr. Harding: I have one further question. What is the differential today in the Montreal market between Alberta crude and Venezuelan crude, delivered?

Mr. Howland: That is not an easy question to answer, and I am not dodging the question.

One has to determine what Venezuelan crude one is talking about, because there are two or three different crudes of different qualities coming in from Venezuela. But the very broad perspective is that we know again by published figures that the landed price of imported crudes in Montreal are now below the published prices of Alberta oil.

Mr. Harding: How much below?

Dr. Howland: That is very difficult to answer. One would have to take a particular oil and a particular company.

Mr. Harding: Let us say, comparable grades.

Dr. Howland: Now you are asking a question that is a little different.

Mr. Harding: Actually, what I am thinking of is whether the difference is slight or so wide that it looks as if it is almost an impossible task to compete.

Dr. Howland: Unless we spend a lot of time on this, I cannot tell you what the cost is of delivering Alberta crude of a certain quality through a certain provincial pipeline to a certain refinery. What I did want to draw your attention to, though, is that the average price of Alberta crude is higher in Alberta than the published figures, the DBS figures, of the price of landed crude in Montreal. There is no transportation factor involved at all, and Alberta crude is still more expensive in Alberta than is landed crude in Montreal.

One could assume 200,000, 300,000 or 400,000 barrel a day pipeline, but that would have some cost no matter what figure you put on it. You might put 50 cents a barrel as the cost of transporting Alberta Crude, but you are starting with a crude which is more expensive to start with than the landed price in Montreal.

The Chairman: Mr. Hees.

Mr. Hees: Mr. Chairman, I would like to ask Dr. Howland what chances he thinks Canada has in the foreseeable future of increasing our exports of crude oil and gas to the United States. As he remembers very well, because we worked together when we worked out the original national oil policy, we had a schedule of increased shipments year by year which was very satisfactory all around, and I am rather disturbed now that there has been a cut-back. When do you think we may resume increased shipments?

Dr. Howland: May I address myself to a longer term of approach first?

Mr. Hees: Yes.

Dr. Howland: Our estimates of supply and demand for natural gas in the United States covering the next decade or two lead me to believe at the moment that we will be able to market any amount of natural gas we can discover. In fact, unless we find some very large resources away beyond our expectations at the moment, Canada will not be that significant to the United States because they have such a tremendous demand growing up in their incapacity to meet their own supply, according to what information we have now about potential discoveries.

Mr. Hees: In other words, within reason, anything we could produce in addition to what we are producing now, we can sell there.

Dr. Howland: I would think so, sir, yes. On the oil situation, I think we brought to this

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Committee at our last appearance with you our considered judgment, although it is obviously not final, as you would know, sir. The Board has to keep changing its mind as part of its process of being intelligent. But our forecast did indicate that the supply and demand situation in the United States would require, in the not too distant future, substantial quantities of Canadian oil, assuming that the United States maintains a posture of wishing to be relatively independent of overseas tanker-borne oil. Even if one looked at the very significant discoveries in Prudhoe Bay and assessed this at 20 to 30 billion barrels, which is a very large figure equal to the 30 billion total of the United States established reserves today, one could not escape the conclusion that by 1978 or 1979 the United States would be requiring very substantial volumes from Canada.

Mr. Hees: It will not be until then, ten years from now?

Dr. Howland: I am saying that if one assumed that there were 20 to 30 billion barrels in Prudhoe Bay, the very substantial gap at that time would lead to a demand on Canada of a growth each year after that of something like half a million to three quarters of a million barrels a day. So the real policy problem here is how the resources of Prudhoe Bay are to be absorbed into the

United States in a manner that the Canadian resources will be available in sufficient quantity to meet their gap in supply.

The present established resources in Canada in oil are insignificant to the United States, because by 1975 we estimate that they will be using up something like 5 billion barrels a year, and the Canadian Alberta resources are probably, at the present time, about 10 billion, which is a two-year supply.

You will recall from your days of being concerned with these matters, sir, that it was the Athabasca tar sands that gave Canada significance to the United States. Now it may be our Canadian North and the Athabasca sands but the key problem is to make sure that our industry develops sufficiently over the next period so that when this gap does emerge in very significant figures, the gas industry and the oil industry in Canada will be in a position to meet the requirements of the United States.

Mr. Hees: Thank you very much, doctor. Thank you, Mr. Chairman.

The Chairman: Mr. Comeau.

Mr. Comeau: Mr. Chairman and Dr. Howland, would you bring us up to date on the Fundy tides project?

Dr. Howland: I think you have the wrong—

Mr. Comeau: Does this not come under energy?

Dr. Howland: We are doing considerable engineering work on this matter, but I think it would be much better if Dr. Isbister who chairs that work responded to your questions on that subject.

Mr. Comeau: I will probably ask that question later then. I notice that in your estimates for 1969-70 you have \$5,000 for grants to Canadian universities for research in energy resources, under Vote 80. Would you explain this?

Dr. Howland: Yes. We initiated a project on which the Department of Energy, Mines and Resources and the Energy Board now work together to try and create a pool of potential economists who would be versed in the energy field. We have talked to York University with the thought of promoting with them the development of a section of their economics department designed to deal with energy

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matters. It is a very difficult thing to find capable economists who have some background of energy matters. It was with this thought that we have facilitated the development of the department concerned with the training of people versed in energy matters.

Mr. Comeau: So what you are really doing is sort of initiating a study at a cost of \$5,000. You are not going into research, what I properly call research.

Dr. Howland: No, this is a contribution to the university for them to proceed in this direction of training people.

Mr. Comeau: I think my other question on would have to be asked of the Minister. Would you answer on Vote 80, too, sir? The Association of Universities and Colleges of Canada presented a brief a while back requesting, I think, more research money for universities. Would you care to comment on that? In Energy, Mines and Resources, how do you operate as far as research in your field goes with respect to universities?

Hon. Otto Lang (Minister without Portfolio): I think, Mr. Chairman, the generality of the question really does refer to items that we may discuss more properly under the next item. This item, of course, is a small, a very limited program of a specific nature related to the specific programs in which the National Energy Board is interested. I do not think it could be said to meet the broad case being made by the Association of Universities which is really dealt with more in many other departments of government.

The Chairman: Would you save that until we have item 1 before us, Mr. Comeau?

Mr. Comeau: I have one other very small question. I see here an item for "Furniture and Fixtures". There was an item for \$5,000 in 1968-69 and another item this year for \$6,100. This is a small item but is this a new office or what?

Dr. Howland: I do not know whether there is really enough money in there because we have been asked to move. Having successfully moved to Place de Ville, Tower B, we have now been asked to move and we are in the course of preparations for moving once again.

Mr. Comeau: Thank you, sir.

The Chairman: Mr. Ritchie.

Mr. Ritchie: Speaking of the Americans and their reserves, I understand there are large reserves in the Colorado tar sands or shale sands.

Dr. Howland: I cannot hear.

Mr. Ritchie: I understand so far as the American reserves or American oil possibilities are concerned, there is a great deal in the Colorado shale sands. Is this included in the 30 billion barrels?

Dr. Howland: No, it is not. It is included in our estimates which looked at this gap in supply, but we had to make assumptions about the rate of development of the oil shales and our Athabasca tar sands. In the assumptions we have made, we have been in very close touch with people who are fairly knowledgeable about the oil shales. One of the impacts of Prudhoe Bay will be to tend to push back some of the development of the synthetic fuels in the United States. There are several sources of supply for the United States, indigenous U.S. supply bases, which are gasoline from coal, natural gas from coal, or the shales. All of these you have to assess in terms of economics. We have made an assessment that they will be developing these, but not at a rate which is on an economic basis that would preclude Canadian crude competing. The Board had to assume that the question of price did matter.

Undoubtedly the answer is that the United States has a very, very substantial resource in the oil shales. The only question is how

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fast will they develop this, and the rate of expansion will depend to some extent on their price structures.

Mr. Ritchie: Does the cost of extracting this, at least as it is known now, preclude much production in this field for the moment anyway?

Dr. Howland: There are two factors on this. One is that the United States government owns a great deal of the oil field areas and it depends in part on the United States government policy about placing these at the disposal of the industry. Second, technology at the moment has not developed to the point where it would be competitive with ordinary production of oil. So these things I cannot forecast really. I would have to forecast what the United States government policy is going to be, also to forecast the developing rate of

technology. To the best of our judgment, we have forecast some development but not enough to fill that gap. If Canada will not sell them the oil at reasonable prices I presume they could develop their oil shales.

Mr. Ritchie: Canadian oil would always be, so far as price is concerned and at the present rate of technology anyway, considerably cheaper than they could get it out of the tar sands, or the oil sands?

Dr. Howland: We would hope so.

Mr. Ritchie: As a matter of interest to me, are these shale sands equivalent to Athabasca?

Dr. Howland: In terms of volume?

Mr. Ritchie: And accessibility, or what I mean is ease of extracting the oil?

Dr. Howland: I think one has to be careful but I assume that the Canadian technology is ahead of the American applied to the two different resources because we have a commercial plan operating in the tar sands.

Mr. Hees: How successful is it?

Dr. Howland: I think if you asked the company concerned they would say they found it more expensive than they had expected but...

Mr. Hees: It is still practical.

Dr. Howland: It is still operating and they are producing a very good quality crude. The one tremendous advantage is that they can produce different types of crude to the specification of the refiners concerned and they are getting something of a premium price for it.

Mr. Hees: Are they producing the quantity that they had expected originally when they set the thing up?

Dr. Howland: The last time I saw their returns they were not, but they encountered a number of technical problems which were with conventional equipment and quite unexpected.

Mr. Hees: Good, thank you.

The Chairman: I should have explained at the beginning that on the first round of questioning we do not permit any supplementaries, so I hope Mr. Ritchie does not feel he has been robbed.

Mr. Ritchie: I have one final question. Taking into account the over-all potential of the shale sands, does this imply that the U.S. has a very large reserve?

Dr. Howland: In the oil shales?

Mr. Ritchie: In the oil shales

Dr. Howland: It is very, very substantial. It is a larger deposit than the Athabasca tar sands in terms of oil resource, which is a very, very large one.

Mr. Ritchie: Thank you, Mr. Chairman.

The Chairman: Mr. Hymmen?

Mr. Hymmen: Mr. Chairman, it has been some time since Dr. Howland and his officials were with us. What was the total Canadian production of crude in 1968?

Dr. Howland: Crude oil and condensates, if you do not mind, because it is in my mind more than is the crude oil, would be in the order of 1.3 million.

Mr. Hymmen: I know that we were supplied with some statistics and charts, but I do not know whether that was given to the Committee before or not.

Dr. Howland: You can hold them against me if I am wrong.

Mr. Hymmen: Do you have a projection target? Do you have a target for a five-year basis? Are figures available as to what this might be?

Dr. Howland: It is very difficult to do that, sir, because one has to assume a number of things respecting the export market. This really prevents any wise projections. It might interest you to know, if you did have a moment to look at those forecast charts, and this illustrates the problem of your definition of where your markets are going to be, that

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the forecast there, if I am correct, was that by 1980 we might be producing between 4 million and 8 million barrels a day but I think it would be very difficult to give you a five-year forecast because this is going to depend on the skill of the industry and the skill of government.

Mr. Hymmen: Ignoring the export situation, there should be a forecast available on domestic demand.

Dr. Howland: We certainly have that, sir. We have done this. We are just at the final stages of publishing a 24-year forecast of demand in Canada. This we can gladly supply. I would prefer if the Committee would indulge us for a few months. We are in the final stages of drafting the report. It will contain this by provinces.

Mr. Hymmen: At the risk of repetition, getting back to Mr. Hees' question, what was the actual export to the United States in 1968? I know we were given a chart at the last meeting—465,000 barrels a day. Is that correct?

Dr. Howland: Can we write this down, then? I think my memory is fairly good on this. On the district 1 to 4, the record I think will show that in 1968 we exported 307,000 barrels a day of condensates, crude oil and butane—that is refinery feed stock—to which you could add about 10,000 barrels a day of products, which is propane, mostly propane, which goes across as border accommodation to farmers in small communities just across the border. So you would add those in—307,000, 306,000 plus 10,000. District 5 would be about 162,000, if my memory is correct, on crude oil, condensates and butanes again—the feed stock. In addition to this you would add a further 8,000 of products.

Mr. Hymmen: From what you have said, sir, with the Prudhoe Bay discovery and other matters, this may remain at a fairly constant level until some time in the future and may not increase to the extent that it has increased since 1965, for example. Is that correct?

Dr. Howland: The estimates are that some time in 1972 the oil will move from the Prudhoe Bay area into District 5. At the present time we are exporting a little over 200,000, which is the highest figure we have ever exported to District 5. In fact, some of our oil is going down into San Francisco. It is contemplated that the flow in 1972 from Prudhoe Bay might be of the order of 300,000 or 400,000 barrels a day. It depends on the rate of discovery and development. This can be absorbed without affecting the Canadian supply. The growth in that area is something of the order of 200,000 or 300,000 barrels a day. So I really cannot feel too sure that either the industry or the United States authorities would consider a line which was built with priority of steel from the United States which has served so well in times of emergency and would, in fact, be placed in discard. This is a personal opinion more than anything else.

Mr. Hymmen: Thank you, Dr. Howland.

The Chairman: Mr. Schumacher.

Mr. Schumacher: Mr. Chairman, I wonder if I could ask Dr. Howland whether there is any machinery to measure whether or not any petroleum products or crude find their way from Montreal into Ontario. That is, is

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Venezuelan petroleum ending up in Ontario? And if there is such machinery and there is such an invasion, what is the extent of it?

Dr. Howland: First, there is machinery in the sense that Parliament charged us with and gave us authority to have those who do import and transfer report to the Board, which they do regularly. All the imports and transfers are reported to the Board. There is a fair amount of misunderstanding regarding the Ontario situation, which is probably the problem that you are talking about—the transfers and imports into Ontario west of the Ottawa Valley. The policy does not cover heavy ore which is industrial fuel. We wish to make very sure that there is no handicap at all to industry in Ontario in securing this vital material which is used for industrial purposes. So that the figures which are often published and talked about regarding the administration of the present policy tend to exaggerate the number of transfers which are taking place. The Board is not concerned, and the government has not been concerned, and rightly, about restricting the import and transfers of heavy oil into Ontario. This is the big factor.

In 1968, in spite of special circumstances of shortages on the Interprovincial Pipeline of crude oil from the West in order to look after the export market as well as the Canadian supply—in spite of that, which called for some transfers by the majors which were fully agreed upon by the Board, the curtailment of any transfers of gasoline into Ontario was 96 per cent perfect. In other words, there was the transfer of some 6,000 barrels a day, if my memory is correct and I think it is, out of a total of 135,000 barrels a day of gasoline which is used in Ontario west of the Ottawa Valley. So there was a very small amount of gasoline that went into there.

On middle distillates the supply ran, I would think, about 12,000 barrels a day transferred or imported into Ontario, which was necessary in order to keep the refiners operating at maximum gasoline. If they did not

operate their refineries to maximize the gasoline, then their prices would have been increased, which is not the intention of the policy.

Mr. Schumacher: What about greases? Are they significant to any other petroleum by-products?

Dr. Howland: No. May I say this on the middle distillates—about 90 per cent perfection. On the other transfers there are greases and specialty products, and I think these were partly some asphalt. The only crude that went into Ontario I think was less than 1,000 barrels a day, and this was a specialty—Venezuelan crude—which has an exceptional asphalt base.

Mr. Schumacher: Mr. Chairman, could we infer from that answer that the pipeline capacity from Western Canada is not great enough to meet the needs of Ontario?

Dr. Howland: No, but it was not sufficient last year. This was not due to the industry's failing to look after the Ontario situation, but

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some delay in the construction of the Chicago loop line which is very vital to Canada, and because of that delay in construction, then they ran into the shortage situation where we had capacity to look after Ontario, but our customers in the United States were left in a very difficult spot. Therefore, our industry, without denying anyone anything, curtailed their own inventories to make sure that they looked after their export customers. But today the Interprovincial line is fully geared to look after both markets.

Mr. Schumacher: I have one final question, Mr. Chairman. You would not see the same thing that happened last year happening again in 1969?

Dr. Howland: Not the least chance.

The Chairman: Mr. Deakon.

Mr. Deakon: Last week I had an opportunity of discussing the matter of the Athabasca tar sands with one of the petroleum engineers. Is it true that it is more economical to produce the petroleum products from tar sands than from the oil fields presently existing?

Dr. Howland: Not at 45,000 barrels a day.

Mr. Deakon: It has been brought to my attention that in addition to the oil and

petroleum by-products, that from this procedure of obtaining the oil from the sands they also obtain other minerals. One specific mineral is the one that is used as a coating on satellites, a very strong heat resistant metal—titanium or something.

Dr. Howland: Titanium?

Mr. Deakon: Right, and there are some other metals which are very, very rare and they can obtain large amounts of these metals during the process of obtaining the oil from the sands, making this process much more economical, because of these by-products, than the obtaining of the oil from the fields.

Dr. Howland: If you are talking about Vanadium and a number of other rare minerals, I have no evidence that in fact the recovery of these metals is in sufficient quantity to moderate the economics of the Athabasca tar sand production.

Mr. Deakon: This gentleman advised me—and he is involved with them—that large amounts of metal are being obtained in this manner.

Dr. Howland: I am sure this will be brought out in very strong evidence before the Alberta Board, which is concerned about giving permits to develop the tar sands.

Mr. Deakon: Is this oil which is obtained from the tar sands a better quality of oil?

Dr. Howland: No, I do not think that that one could say that. It is a good quality oil and the one value of the fact that it is really a manufactured product is that you can manufacture to specifications, and this has proved very useful to a number of refiners who have geared their refining operations to these tar sands and say that they would like to have a stream of crude oil supply manufactured to specifications. That includes no sulphur, or a very limited amount of sulphur, and that is quite a big consideration today in large urban areas where pollution is of concern. Therefore, they are getting a slight premium for their crude—though it is good crude.

Mr. Deakon: Has there been any discussion at all regarding the possibility of a pipe line to transport the Prudhoe Bay oil to the United States through Canada?

Dr. Howland: May I ask you what you mean by "discussion"? There has been a lot of discussion.

Mr. Deakon: With the American authorities as to the feasibility or the possibility of the Canadian government permitting this to be done.

Dr. Howland: I think we are certainly at the stage where I can say that the Energy Board has been in touch very closely with those who might be interested in developing such a line. Our Canadian industry is very actively looking into this matter; they are almost acting as a corporation in looking into it. I suppose I would be stealing publicity from them if I were to say more than this, but I do want the Committee to know that the Board has been in very close touch with the pipe lining com-

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panies and various companies in Canada who are very active in exploring the potential of this line. This not only involves oil, but gas.

Mr. Deakon: Thank you, Mr. Chairman.

Mr. Mahoney: Dr. Howland, I do not think you should be shy about stealing publicity from the industry, because I suspect that one of the major concerns of the nation is the suspicion of inactivity on the part of the federal government in this area. I would feel in the national interest, if you have anything to publicize, it would be well to do it.

Firstly, how is your voluntary quota system coming along? Are you getting the compliance that you had hoped for, or are we still looking at the possibility of expert quotas being invoked?

Dr. Howland: My impression, sir, is that the oil industry understands how important it is to keep the right posture, and I feel quite confident that they will, in fact, behave as they have in the past with tremendous statesmanship which has allowed us to grow from 115,000 barrels a day exports in 1960 to the figures I gave earlier on the very large export that is taking place today.

Mr. Mahoney: Do you feel, with the compliance with the 1965 convention,—if I can call it that—for exports into Districts 1 to 4 that sufficient exploration activity will be generated to maintain particularly the reserves in gas in which the United States is so interested, or do you not feel that perhaps the industry needs some additional stimulus to do the kind of exploration we need to supply the gas requirements, if not the oil requirements?

Dr. Howland: I am always in favour of motherhood. Certainly, as far as I am con-

cerned, the more stimulus we can give our industry with export markets the better. My impression Mr. Mahoney, is that the industry is very actively exploring for natural gas right now; that is the impression I have. They are very actively exploring with a distinct sense of the prospects of the export market. They have not gone through two regulatory boards yet, but I think they are assuming that the marketplace and the conditions generally are in favour of exploration.

On the oil side we should not forget that for a few years when Mr. Hees was working with the Board we were arguing about getting 7,000 barrels a day growth in districts 1 to 4. Whatever the industry may feel about restriction and we might share some of their feelings, they have under that arrangement got a guaranteed growth of 26,000 barrels a day.

Mr. Mahoney: In other words, you feel there is a change in emphasis in exploration to a direct search for gas rather than a coincidental discovery of it?

Dr. Howland: Very much so, Mr. Mahoney.

Mr. Mahoney: Dr. Howland, is there any unit by which crude oil can be measured so that we can perhaps get some more definitive idea of costs on this Montreal idea? What I am thinking of in particular is that with gas, really the number of cubic feet is not what is important; it is the number of BTUs and, when you get right down to it, the cost per 1,000 BTUs.

Dr. Howland: Yes.

Mr. Mahoney: I realize there are varying grades of crude oil and so on, but is there a recognized measure by which we can perhaps determine some costs of energy delivered as opposed to volumes of guck?

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Dr. Howland: I have not found any method, Mr. Mahoney, that will distinguish the economics and the quality of the crude. What you do eventually is look at a particular refinery and its requirements for crude or, very often, crudes and its ability, with the type of equipment it has, to manufacture from its feedstock the various quantities of petroleum products which match its market. There are refineries which are large but unsophisticated and largely skim for gasoline or fuel and the rest goes into heavy fuel oil. There are refiners who have very sophisticated refineries and they can break down a crude of almost

any nature, but their capital cost is going to be much greater. One of the companies which we were dealing with just recently manufactures 85 per cent of the barrel into gasoline. To do this you have to have a much more sophisticated refinery, much more capital intensive, but you also have to have a market that allows you to do that. I do not know of any other method, if you are taking Montreal, than to take the sum of the refiners, the sum of the market, the breakdown of the required products and the matching of crudes to that situation. Pricing then becomes quite clear—you have to have that kind of crude at that type of price to match the imported crudes.

The Chairman: No one else is left on the first round. I have Mr. Comeau, Mr. Mahoney, Mr. Harding in that order.

Mr. Comeau: I have just one question for Dr. Howland and it has to do with coal.

In your opinion, sir, is this a viable source of energy?

Dr. Howland: I am tempted to answer that because I have had a fair amount of experience on coal, but there are other people here who are probably more versed today in modern conditions.

Certainly coal in certain areas of Canada is quite viable. I think you have a job generalizing on coal. American coal certainly sets the price in very large areas around Toronto and the Great Lakes area. They set the price for the bunkers. One could not say that the American coal industry is not viable but there are pockets of the coal industry in Canada which have over the years proved not to be viable.

Mr. Comeau: Have you seen any signs of American coal running out, which would allow as to use our own?

Dr. Howland: I have not seen any signs of it.

Mr. Schumacher: May I ask a supplementary?

The Chairman: Yes, you may.

Mr. Schumacher: You said you had an idea of American oil reserves. Have any similar studies been conducted in reference to coal?

Dr. Howland: United States coal?

Mr. Schumacher: Yes.

Dr. Howland: They are very well acquainted with their own coal resources.

Mr. Schumacher: I was wondering whether we are acquainted with their resources to the same extent as we are with their resources in oil?

Dr. Howland: Certainly the Energy Board is not; I do not know whether the Department of Energy, Mines and Resources is acquainted with it. However we have on many occasions at international conferences—OECD—listened to the Americans talking about their capacity to export coal to Europe. I have heard it said at such times, although I could not give the Committee the evidence, that there has never been a question raised by either the Americans or their potential customers on the capability of the United States coal industry.

The Chairman: Mr. Mahoney.

Mr. Mahoney: On this second round I will question on only one subject. You may be familiar with Mr. Jack Gallagher's latest ingenious idea which seems to be premised on

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the thought that a great deal of the resistance in the United States to increasing imports of Canadian crude oil is founded on the fact that ours is delivered too cheap relative to theirs and also that there is political pressure on United States authorities from people who are interested in the high priced crude oil that they are producing there.

Dr. Howland: I think it is true, Mr. Mahoney, that one of the features that makes Canadian crude oil supply attractive to the United States is that Canadian crude is produced under somewhat comparable conditions and therefore is not disruptive of a very important program that they have in making sure that their domestic supplies develop as they wish them to. The dilemma we are in of course is that Canadian crude is too expensive in Ontario. It is over-priced in the Ontario market, and, if you like, underpriced in the United States.

Mr. Mahoney: This seems to more or less bear out this "heads I win, tails you lose" idea of suggesting that what we should do, by tight line tariffs, is adjust the price of crude oil delivered in the United States upward and use the extra money collected to adjust the price of crude oil delivered in eastern Canada downward. Has the Board considered this?

Dr. Howland: This could have some peculiar reactions, which I am sure you could

appreciate too. I do not know how some of our American friends might feel about this. The other thing is that we would have a very difficult time if somebody appealed to the Board on a discriminatory rate. The Board is charged with ensuring that the tolls charged by the pipeline companies are nondiscriminatory. I do not know just how we would fare. Are you suggesting changing the Act?

Mr. Mahoney: Presumably we are talking about somebody, in the case of the upward adjustment, who would be happy to see it go up.

Dr. Howland: Not if you were using it.

Mr. Mahoney: Well, it is very interesting.

The Chairman: Mr. Harding.

Mr. Harding: Mr. Chairman, there are several things I wanted to ask questions about but I think I will confine myself to one topic.

Does the Energy Board play any role in the setting of export prices for gas and oil?

Dr. Howland: Yes, in the sense, sir, that we either approve or disapprove of the export price. The Act charges us with ensuring, among other things, that the price at which it is sold is just and reasonable and in the public interest. As you may know, we have on occasion turned down an application for a licence to export because we did not consider that the price was adequate.

Mr. Harding: The words "in the public interest" could take in quite a wide field.

Dr. Howland: That is right.

Mr. Harding: Do you insist on export prices being as high or higher than the price charged to Canadian consumers?

Dr. Howland: I do not think I can quote exactly the words that we have published, but we do have three criteria which the Board does apply, among other things, in determining that price. One criterion is that the gas exported must bear its full share of all costs involved—in other words we are not loading Canadians with any costs. The second criterion is that where there are similar amounts, and quantities the price must not be lower than the price sold to Canadians. Thirdly, it must bear a reasonable relation-

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ship to what we have called opportunity costs—which is basically the cost of alternative

sources in the export market. These are the three criteria that we apply. However this does not preclude us from using any other judgment factor that we think is appropriate.

Mr. Harding: This is in the case of gas. Does this apply to similar energy such as electricity?

Dr. Howland: Electricity, yes.

Mr. Harding: And to oil and coal?

Dr. Howland: We do not have export licencing on either oil or coal, so we do not get involved in either of those.

Mr. Harding: As far as the gasoline and electricity are concerned, you may more or less be classified as a public utility board?

Dr. Howland: We are charged with the responsibility, sir, by Parliament, to insure that that licence is not granted unless the board is satisfied.

Mr. Harding: Do you have any jurisdiction in the pricing of gasoline in Canada, for example?

Dr. Howland: No, sir.

Mr. Harding: You do not.

Dr. Howland: No, sir.

Mr. Harding: Is that under provincial jurisdiction?

Dr. Howland: Yes, sir, as far as I know.

Mr. Harding: Yes, that is all, Mr. Chairman.

The Chairman: Are there no further questions? Shall item 80 pass?

Vote 80 agreed to.

I want to thank Dr. Howland for appearing before us again today and for answering all the questions that have been presented to him.

Dr. Howland: Thank you, Mr. Chairman.

The Chairman: Gentlemen, we will resume discussion under item 1 of Department of Energy, Mines and Resources. We have with us today, Mr. Lang and his officials. First of all, I would like to express on behalf of the Committee, our appreciation to the departmental people and to the Inland Waters people at Burlington, who looked after us for a day on our visit last week to the Canada Centre for Inland Waters; we had a very

interesting day and found it extremely informative. I think that it would be very appropriate at this time also to express thanks on behalf of the Committee to one of our Committee members, Gord Sullivan, who hosted the Committee for dinner.

Mr. Lang, would you introduce your officials to the Committee at this time? Since Mr. Lang issued his official statement on his previous appearance, he will not make a statement today. Mr. Lang.

Mr. Lang: Thank you, Mr. Chairman. As you said, I do not intend to make a statement to the Committee. However, I will be glad to answer any questions that the members may have.

The Deputy Minister of the Department of Energy, Mines and Resources is here with me, Dr. Isbister. In order that these gentlemen be introduced correctly, I will ask him to introduce them. Dr. Isbister?

Dr. C. M. Isbister, Deputy Minister, Department of Energy, Mines and Resources: Thank you, Mr. Chairman and Mr. Minister.

On my right is Mr. Carl Allen, then Dr. Harrison, Mr. Davidson, Dr. Prince and Mr. Buck. It is most difficult for me to remember which are doctors and which are Mistrs. However, I think that they have all been introduced to the Committee before.

The Chairman: Thank you very much, Dr. Isbister. Mr. Sullivan, on behalf of the Committee I have just expressed appreciation to you for hosting us on the evening we visited Burlington. We appreciated it very much.

Mr. Sullivan: I was delighted to have you.

The Chairman: I am now open to questions under item 1; Mr. Hees has already indicated his intention; again, this is a five minute period. Mr. Hees.

Mr. Hees: Yes. I am interested in the practical things that can be done by the federal

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government to get the anti pollution program off the ground across Canada. It seems to me that pollution is like the weather: everyone talks about it and yet no one does anything about it; everybody says that someone else has the jurisdiction and that they cannot act. I made a suggestion to the Prime Minister yesterday. I think he wanted to answer and he could not. I wonder if Dr. Isbister could give me some advice: I realize that it costs a great deal of money for industry to put

machinery and equipment into their plant to take the bacteria out of industrial waste which is to be dumped into a river or a lake. However, is there anything that would prevent the federal government from making available the same kind of inducements as it did during wartime to industry, so that it was able to go into war production. I am speaking of low interest loans, fast write-offs and so on; as someone who has worked in the department of finance, I know only too well what that involves. What is your opinion about that, Dr. Isbister?

Dr. Isbister: Mr. Hees, I think that would be a matter of policy and that you should refer it to the Minister.

Mr. Hees: I would be glad to. However, I do not think I will get an answer out of the Minister. I just hope I can get an answer. I will try it; let us see who is right.

Mr. Lang: I think the performance today is actually very much like yesterday and that someone should ask a supplementary at this stage. The question you have asked is in terms of what is possible; the sort of things about which you asked are all possibilities in terms of choices that are available for action.

Mr. Hees: I mean practical action.

Mr. Lang: The question really is—and this is the one that the government has to face and is facing—what is the best way of tackling the problem, having regard in this area to the priorities within the area, and to priorities which the government generally faces? This is a question which we are facing up to in an area which we are expecting to tackle much more fundamentally, an area with which the Canada Water Conservation Assistance Act—which will soon be before the House as far as our legislative framework is concerned—will deal, and under which subsequent government action will be taken.

Mr. Hees: Mr. Lang, you were not in the House when Mr. Paul Martin was; if you have ever heard him give an answer, you would realize how close you came to some of the answers that he has made.

Mr. Lang: Mr. Chairman, I would like to thank Mr. Hees for the compliment.

Mr. Hees: What I am saying is that you talked for about two minutes and said absolutely nothing. Now what I would like you to say is whether or not you believe that the suggestion I made is a practical one; if not, why not? If you do believe that it is practical

in order to get the anti-pollution moving, are you going to recommend it to your colleagues; if it is not practical, then what are you going to do in its place?

Mr. Lang: I really have to cross examine Mr. Hees, Mr. Chairman. What do you mean by practical? You are asking me to comment on one kind of program; in fact, what you are trying to ask is, what our policy is likely to be. My answer to that is a perfectly good one and I will be as straightforward as possible: you will know what our policy is going to be when we are prepared to announce it and when we do announce it. If that is plain enough, then I am happy. So in terms of practicality, if you mean what is feasible, if you mean the best program, if you mean a prediction as to what we are going to do, I am not prepared to give that to you right now.

Mr. Hees: I have been here for eighteen years and this is the kind of question that Members of Parliament have asked Ministers in all the years that I have been here. That is why you come and ask on a minister's estimate; you want to know what the government is thinking, what it is planning; if it

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does not think that certain programs are good, why not? This is why we are here today. If we are not going to get answers to these things, there is not much use in our coming; we might just as well stay away and forget the whole thing. You have not told me anything yet. Are you considering this. Do you think it is a good idea or do you think something else is better? I am trying to get at what the government is going to do, to try to get the idea of anti-pollution—which we all agree with, just as we are all against sin and for progress and motherhood and so on, moving? What are you thinking of doing to get this program moving and something done?

Mr. Lang: The precise kinds of questions that face us, of course, in considering the method to proceed quite apart from the jurisdictional question to which you refer, are questions such as the expense of any particular program to correct pollution and the proper place for that expense to be borne. This is a very fundamental question and one upon which I think there is some good developing opinion.

You are suggesting a particular kind of inducement program, I take it you were suggesting one in which the Treasury would be involved in paying for the incentives. I think

there is a good philosophic argument for the major portion of pollution correction becoming, in fact, a part of the production process. The difficulties, of course, involved in that are the disruptions which could occur if we were to turn completely abruptly from a system where not sufficient attention was paid to that type of solution to one where full attention was paid to it. That is a matter which must concern us.

Mr. Hees: Well, Mr. Lang, you have the right to answer or not answer. You have not answered one single question I have asked you anywhere. It is your privilege if that is the way you want to handle yourself.

Mr. Langlois: Order, order.

Mr. Hees: Oh, shut up, for God's sake. If that is the way you want to handle yourself and if you want to insult our intelligence by talking a lot of generalities that have said absolutely nothing for five minutes, it is your privilege but it is a waste of time for the Committee members here.

Mr. Lang: I am sure, Mr. Chairman, that when Mr. Hees has had a chance to read the answer he may be able to understand.

Mr. Hees: I have heard Mr. Martin give that answer too, and that is absolute bunk and baloney and an insult to the members of this Committee. You know you have not said anything and if you have tell me what you did say.

The Chairman: Order please, we passed a motion at the beginning of this meeting that we would have five minutes for each questioner and we have now gone beyond that.

Mr. Hees: If this is the new way of examining estimates, God help Parliament.

The Chairman: Mr. Comeau?

An hon. Member: Oh, brother, wow.

Mr. Hees: Oh, shut up, and try to get a little common sense into your stupid, thick head once in a while.

An hon. Member: Thank you, sir, thank you.

Mr. Hees: All right, that is exactly what you deserve.

Mr. Comeau: Would the Minister answer one of my previous questions with regard to research in universities? The association of

universities and colleges urged governments to adopt a policy of establishing government research laboratories on university campuses. What are you doing in this respect or is this the correct Department to take action on this? I understand that research finances are probably limited in some cases.

Mr. Lang: Many, many departments of government, of course, are involved in research programs of various kinds. Of course some governmental laboratories, if you use the word "government" in the broadest form of the word, are indeed already established on university campuses and working side by side with universities. I am not sure the exact intent of the comment you refer to from the brief and whether this kind of action is the kind of thing that the association is urging more of.

The government is, of course, involved in many programs of research which directly support and encourage research on campuses and of university personnel in regard to programs under the various departments. This is a question that is broader than the question of what exactly is going on in this Department, but certainly this Department too, has a very full involvement of this sort in regard to science on campuses and using university personnel.

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Mr. Comeau: Might I ask...

Mr. Lang: Would you like to mention some specific items, here?

Dr. Isbister: The items are in fact enumerated in the estimates, not all together, but I was just ticking them off while the question was being asked, and if you will bear with me I can just read them in series: The first is: Grants in aid of research in mineral economics and universities, \$6,000. Sorry, if you look at page 21 of the White Book and the particular items here which represent grants to universities properly so called. Others are Grants to learned societies which are indirectly, for example, of assistance to universities, and university faculties but not directly to universities.

Just to begin again, Grants in aid of research in mineral economics in universities, \$6,000; Grants in aid of surveying and mapping research in Canadian universities, \$28,000; Grants in aid of mining and mineral processing research in Canadian universities, \$112,000; Grants in aid of research in the

geological sciences, \$253,000; Grants in aid of research in astronomy and geophysics in Canadian universities, \$19,000; Grants to universities to cover field expenses in Co-operative Crustal Seismic Refraction Program, \$10,000. Then flipping over to page 28 which gets into the frants field as far as water is concerned: Grants in aid of water resources research, \$495,000—this item is a 100 per cent increase from the previous year; then Grants in aid of resources research, \$330,000; Grants in aid of geographical research, \$520,000.

Aside from the particular items to which I drew attention, that have had a very large increase, the general run of these university grants items represents an increase of about 12 per cent from the preceding year.

Mr. Comeau: You mean by your last statement to say that you have increased your grants 12 per cent from the previous year.

Dr. Isbister: Yes, with the exception of the ones to which I drew attention which were increased by much larger amounts, the ones in the water field.

Mr. Comeau: As far as your Department is concerned, do you feel there is enough research done to study, for instance, water? I know you have the inland water research and various universities probably add some form of assistance to general research programs, but do you feel that generally. Your Department is satisfied with the research going on with respect to what you want to find out?

Dr. Isbister: You are asking me personally, sir, and I hope the day that I answer yes to that question that I will be fired. Every day of the year we have the problem in the Department of tailoring scarce resources to unlimited demands on the abilities of the Department. All these figures represent the effort of the Department to come to terms in a reasonable compromise with the various pressing needs that we see and that are going before us.

Mr. Comeau: I have another question, Mr. Chairman. Would you bring me up to date sir on the Bay of Fundy Tidal Power Project?

Dr. Isbister: Yes, although I am afraid I cannot say much more than at the first meeting. The Atlantic Tidal Power Programming Board, as it is called, is an organization of three governments; Canada, New Brunswick and Nova Scotia. It is operating under a budget received from the three governments which by now is a little in excess of \$2 mil-

lion. We are operating under instructions. The agreement among the three governments was to conclude our studies prior to June of this year. The studies have, in fact, already been concluded but that does not mean the report is ready yet. In fact, during recent weeks we have encountered some rather serious slip-page just at a very crucial period because of the airline strike. I know very well that the result of the way that hit the complex organization we have set up is going to be to defer the report for longer than the duration of the

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strike itself. However, if you will forgive me for being vague, within a few months the Board will be making its report to the three governments, and I have no doubt that at that time the governments will wish to make the recommendations and the substance of the study public, because there is great public interest in it.

Mr. Comeau: By a "few months" do you are in the fall?

Dr. Isbister: If you do not mind thinking of the fall as a fairly long season of months, yes. I doubt that it will be ready in September.

The Chairman: Mr. Schumacher, and then Mr. Beaudoin.

Mr. Schumacher: As Chairman, can the Minister advise us whether or not the studies conducted by his Department on our water resources now lead him to believe that we can drive towards adopting a policy of exporting water to the United States?

Mr. Lang: No, Mr. Chairman, the studies of the water resources that are going on are certainly not such as to allow any definitive conclusion, particularly because the question of export, of course, is a pretty difficult one when you are talking hypothetically without naming the specific kind of export you would like discussed. It depends upon many complicated forecasts about our own needs, and projections about possible uses here, quite apart from the technical questions, if you like to call them that, on what water is available.

Mr. Schumacher: Do I understand, Mr. Chairman, that the policy will be that possible export will not be considered until we are assured of all our foreseeable domestic needs?

Mr. Lang: I do not think I would want to put the answer that strongly, by any means. The question of a specific application for

export, an application which is not before us and therefore not in issue, would have to be examined in the light of the specific nature of the application and the kinds of studies we felt were appropriate before such application could properly be considered. I would not want to say that before considering any application, we would have to know everything about everything which is almost as strongly as you put your question.

Mr. Schumacher: Mr. Chairman, may I then ask whether or not, in any particular application, the government would adopt a policy of denying the application until the other resources in the United States, to which the application referred, had been cleaned up and the Americans had taken effective steps to control their pollution in that area at what we would consider to be a reasonable level?

Mr. Lang: I take it you are asking whether, before we would consider water from here going to United States, we would want to be sure they had cleaned up their water and were using their water? Talking again in this hypothetical way, I do not think that that would really be an appropriate or relevant consideration. Surely we would want to look at the value of the resource to us, at the value of the resource if made available to anyone else and a look at all of our interests in that resource.

For us to try to impose particular action on the United States through a policy that would, in effect, by hypothesis, hurt us, is a proposition I can scarcely imagine.

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Mr. Schumacher: Is the government then examining the water situation on a continental basis, or is it looking at it only from Canada's viewpoint? I ask that in the context of the U.S.-Canada auto pact. That was looked at on a sort of continental basis.

Mr. Lang: I do not know of any positive continental view of water which exists at the moment. Up to now you have been asking hypothetical questions about possible situations. We are not really faced with those situations at the moment.

Mr. Schumacher: I have one final question, Mr. Chairman.

If the text of the Minister's speech came to my office I regret I have not yet been able to read it, but in a recent speech in Edmonton concerning water I think he gave a lot of

people cause to believe that Canada would shortly start exporting water.

Mr. Lang: I am glad to have the opportunity to clear that up. I saw that newspaper report today. It was not a speech. Some questions were put to me by an interviewer who seemed to be trying to get me to say that until the studies of the Saskatchewan-Nelson Basin were complete, and for many years in the future, it would be completely impossible for Canada to contemplate any export of water. My answers to him were continually in the vein that I would really like to know what kind of export he was talking about, but that if he were talking about a few pails of water for a few hours I certainly would not agree with his proposition. I was really trying to refuse to agree to his proposition that we simply could not consider exports for a long period of time.

The report I have seen has rather changed the meaning of those answers into some kind of positive statement that sounds as though we might export very soon. I do not think it is a current issue.

I am willing to say again, if it makes any difference, that it does seem to me that even in relation to a resource such as water we ought to be in a posture of being willing to look at our total interest, and that could conceivably, under certain circumstances, lead to a conclusion in favour of export.

The Chairman: Mr. Beaudoin?

[*Interpretation*]

Mr. Beaudoin: Thank you, Mr. Chairman. I will put my question to the honourable Minister, if you will allow me. A short while ago, the honourable Minister announced that he wanted to bring before the House legislation on pollution. Could the honourable Minister tell us whether this Act would inform the provinces on their responsibilities to co-operate with the federal government with respect to pollution?

[*English*]

Mr. Lang: Mr. Chairman, I again hesitate—and I apologize if members do not appreciate the hesitation—to go into the content of a bill prior to its presentation to the House in the form of a bill. I hope that before very long the bill will be available.

If you would like a comment about one's general attitude towards such problems, it is that a maximum amount of co-operation between all of the involved authorities is

desirable in pursuing a program which touches on many facets of our economic and social life.

[Interpretation]

Mr. Beaudoin: I have a supplementary question, Mr. Minister, if you will allow me. Thank you.

Do you believe that legislation such as this could attempt to create a joint federal-provincial plan—and I am thinking at present of the Province of Quebec—which would establish the federal and provincial responsibility with respect to pollution?

Mr. Lang: Again without referring to the bill specifically, I think that is the kind of approach I was referring to in a general way

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when I said that co-operation in this area is the desirable solution. Because no matter how one views the importance of water and its uses, one can see that it affects so many different aspects of life that narrow jurisdictional issues should be avoided if possible.

[Interpretation]

Mr. Beaudoin: Thank you, Mr. Chairman. Thank you, Mr. Minister.

[English]

The Chairman: Mr. Whiting.

Mr. Whiting: Mr. Beaudoin touched on the area that I wanted to ask questions on, but I have thought of one other question for the Minister: Has any consideration been given to bringing the whole area of pollution under one Department? Right now I know Fisheries has jurisdiction, the Department of Transport has jurisdiction. Is any consideration being given to bringing all these under one department?

Mr. Lang: A question asked in terms of consideration is always difficult to answer, except in terms that these things are always being looked at. I would not want it to be thought that there is any immediate plan to change the present general organizational set-up. As indicated when I was before the Committee earlier, I appreciated the advantages that were supposed to be gained by that kind of consolidation in terms of the rationalization of government's handling of pollution, but that at the same time such rationalization in regard to pollution would create other difficulties. It would create difficulties in those

other areas where aspects of pollution are now administered because those aspects are legitimate parts of the function of those departments.

It seems to me that this is an important thing to bear in mind as one looks at this question of the proper administration. It is useful to note that the legislative responsibility to co-ordinate pollution programs is that of the Department of Energy, Mines and Resources.

The Chairman: Mr. Hymmen, you are next and then Mr. Schumacher.

Mr. Hymmen: Mr. Chairman, I have one short question. Mr. Whiting asked the question that I asked the Minister at one of our earlier meetings. I want to get on to Mr. Hees' question about incentives for industry. One of our problems, of course, is that the whole operation is distributed so widely in various departments. One matter that I was interested in is the incentive at present available to municipalities and the grants for which come under CMHC under the Minister responsible for housing. Is it possible to obtain for this Committee some figures of the municipalities which have taken advantage of the grant available and what provinces they are located in?

Mr. Lang: I have no doubt that those figures could be readily obtained and I would be glad to obtain them. As you say, it would be from another department, but I would certainly be glad to get those figures and let you have them.

Mr. Hymmen: This Committee is set up on National Resources and is hearing evidence from the Department of Energy which has a water branch in the inland water center. The thing that appears strange to me is that because of circumstances the International Joint Commission appears before the Committee on External Affairs. This again is diluting our while consideration of a very important subject. I just make that comment in passing. Thank you.

Mr. Schumacher: I would like to return to the export of water problem again. I would like to go back to the question of the possibility of our exporting to the United States in a situation where they have a pollution problem, and that is why they are wanting the

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water in that area. I am wondering whether or not the government, in considering such an

application, would consider the fact that this water would be useful in an industry which was manufacturing something that we also manufacture and produce here.

We might be subsidizing American production, because they have not been spending the money controlling pollution. That is why they need the water from us. They will get the water from us and then there will be an unfair advantage. Would that be considered in any possible application?

Mr. Lang: I am not sure, Mr. Schumacher, whether you are talking now as though the water which would be exported would be given away. I had always considered that it should be treated as a resource which might, in fact, be sold. If you want to pursue your hypothetical example—and just completely to safeguard the fact that some people might think we would not give adequate attention to all of the problems—if we were talking about water which we were not using and which after study it did not seem that we would require for the period of considered export, if we felt there was no problem about commitment beyond that period, and if the price that was offered us was attractive, then it seems to me that it is a kind of situation where you should be willing to consider the offer.

Mr. Schumacher: Mr. Chairman, my question is: What is the government's policy going to be in determining what is an attractive price? I can think of a situation where there could be water coming from Alberta to subsidize an industry in the United States that is going to have a bad effect in Ontario and Quebec on their manufacturing industries by making them noncompetitive. How are you going to tell whether the price is attractive?

Mr. Lang: Of course, the best test for a price when you are selling something is to decide whether or not it is the highest price you can get. At that point you decide that if the price is as high as you can get and does not compensate you for anything else you are going to lose you do not sell. Anything else you are going to lose is a very, very broad spectrum of things.

Mr. Schumacher: Mr. Chairman, would not the Minister agree that you are not going to be able to put that maxim to work when you do not have an open market? Our only possible customer is the United States. How do you know if you are going to get the best price available when you are not in an auction type situation?

Mr. Lang: I am sure I am not going to be able to do it with your abstract hypothetical type of example, but I simply would say that a responsible government might have to do it with a concrete example considering all issues.

Mr. Schumacher: Mr. Chairman, would the Minister say that one of those issues could be what steps the Americans would take to control pollution in the area where that water was going?

Mr. Lang: I find that a very difficult thing to suggest that we would consider, because that is like saying, if everything else is considered and it is in our interest to sell the thing, we should not sell it to them because they are not doing something else that we would like them to do. I am afraid I do not understand that proposition.

Mr. Isbister: I am not sure whether it would help or not, but the point has been stated on behalf of the United States Government by the former Secretary of the Interior, Mr. Udall, when he visited Ottawa. He said that the policy of the United States is to instal proper water management and that with proper pollution safeguards the United States' supplies of water in the view of his government are adequate. He thought that it would be a long way down the road, after the United States has managed and depolluted its own water, before the United States should even consider major imports of water from abroad. Therefore, I think this is the mirror image of the point, sir, that you have been raising. There has been this expression of American concern from this point of view.

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The Chairman: Are there any other questions?

[*Interpretation*]

Mr. Beaudoin: Thank you, Mr. Chairman. I will ask my question to anyone who can answer it. Would you say that the money that the federal government grants to industry or to universities is a positive contribution to the new policies that the government is drafting with respect to pollution?

[*English*]

Mr. Lang: Yes, I think that in this area, as in all the other areas, the research moneys expended through university programs or upon university programs are encouraging those programs. It is very well spent indeed, because it often produces more effective

research by very qualified people than could be obtained in any other fashion. So I think this is a very worth-while program indeed. In the area you speak of, the same applies.

[Interpretation]

Mr. Beaudoin: Mr. Minister, does your answer mean that this money that the federal government spends for research to fight pollution, is also used to find new ideas that we could not discover otherwise?

[English]

Mr. Lang: Not that there would not be alternative ways of doing the same thing, but perhaps not alternative ways which would produce as much in the way of results as inexpensively. This is a way of using existing talent which is partly occupied in other professional work, and which then directs its attention specifically to projects which are of interest to government programs.

One alternative might be to recruit all of the research staff directly into the Department and try to attract them away completely

from the universities. It might be necessary to pay much more money to accomplish that kind of research and there might be much more expense in regard to establishment and to facilities for them than is now required to produce the same kind of program.

[Interpretation]

Mr. Beaudoin: Thank you, Mr. Chairman. Thank your, Mr. Minister.

[English]

The Chairman: Thank you, Mr. Beaudoin. I have no more questioners on my list. I will put the question: Shall Vote 1 carry?

Vote 1 agreed to.

The Chairman: I would like to thank Mr. Lang and Doctor Isbister and the officials of the Department for being with us this afternoon. At this time I would ask that we remain in camera to receive suggestions for a report to be returned to the House. I would therefore request that all others leave at this time.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament
1968-69

STANDING COMMITTEE

ON

**NATIONAL RESOURCES
AND PUBLIC WORKS**

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 26

THURSDAY, MAY 29, 1969

Main Estimates (1969-70) of the Department of
Public Works

APPEARING:

Honourable Arthur Laing, Minister of Public Works.

WITNESSES:

(See Minutes of Proceedings)

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman: Mr. K. R. Hymmen

and

Messrs.

¹ Barrett
Beaudoin
Code
Comeau
⁵ Cullen
Deakon

Forrestall
Gilbert
Harding
Langlois
² Lind
⁸ MacDonald (*Egmont*)

⁷ Macquarrie
⁶ McQuaid
Roy (*Timmins*)
⁴ Sulatycky
³ Whicher
Whiting—20.

(Quorum 11)

R. V. Virr,
Clerk of the Committee.

Pursuant to S.O. 65(4)(b).

¹ Replaced Mr. Duquet on May 29, 1969.

² Replaced Mr. Chappell on May 29, 1969.

³ Replaced Mr. Sullivan on May 29, 1969.

⁴ Replaced Mr. Marchand (*Kamloops Cariboo*) on May 29, 1969.

⁵ Replaced Mr. Mahoney on May 29, 1969.

⁶ Replaced Mr. Hees on May 29, 1969.

⁷ Replaced Mr. Ritchie on May 29, 1969.

⁸ Replaced Mr. Schumacher on May 29, 1969.

MINUTES OF PROCEEDINGS

THURSDAY, May 29, 1969.
(26)

The Standing Committee on National Resources and Public Works met this day *In Camera* at 9.45 a.m., the Chairman Mr. Hopkins, presiding.

Members present: Messrs. Chappell, Comeau, Deakon, Forrestall, Harding, Hopkins, Hymmen, Langlois—(8).

The Committee met to draft a Report to the House on the estimates which had been studied by the Committee.

After discussion, a draft report was agreed upon and it was decided that the Clerk would distribute copies to all Members for this evening's meeting.

At 11.25 a.m. the Committee adjourned until 8.00 p.m. this date.

EVENING SITTING (27)

The Standing Committee on National Resources and Public Works met this day at 8.15 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Barrett, Beaudoin, Comeau, Cullen, Deakon, Gilbert, Harding, Hopkins, Hymmen, Langlois, Lind, Macquarrie, McQuaid, Roy (*Timmins*), Sulatycky, Whicher, Whiting—(17).

Also present: Messrs. MacLean and McGrath, Members of Parliament.

Appearing: The Honourable Arthur Laing, Minister of Public Works.

Witnesses: From the Department of Public Works: Mr. G. B. Williams, Senior Assistant Deputy Minister; Colonel Edward Churchill, Engineering Consultant.

The Chairman reviewed the last sub-committee report which outlined the time limits pertaining to this evening's sitting.

Following this, he introduced the witnesses and invited questions from the floor.

Honourable Mr. Laing, assisted by his officials responded to the questioning of the Members.

There being no further questions Item 1 of the Department of Public Works was agreed to.

The Committee reverted to an *In Camera* meeting at 9.50 p.m. to discuss the draft report to the House.

The Report was agreed to.

The Chairman was instructed to report the estimates back to the House.

At 10.00 p.m. the Committee adjourned to the call of the Chair.

EVIDENCE

(Recorded by Electronic Apparatus)

Thursday, May 29, 1969 • 2015

• 2013

The Chairman: Gentlemen, I see a quorum. I will now call the meeting to order.

Before we start, I want to mention a few things so there will be no question about them later as the meeting progresses. This is part of your Subcommittee report which was passed yesterday referring to this particular meeting:

That the Committee meet Thursday evening from 8.00 p.m. until 9.45 p.m. to finish Item 1 of the Public Works Estimates, Prince Edward Island Causeway. At this time the Minister of Public Works and his officials are to be present, his officials to include Colonel Churchill.

That at this Thursday evening meeting, each member be limited to eight minutes during questioning.

That at 9.45 p.m. Thursday, May 29, the Committee go into camera to finish the report on the Estimates.

Gentlemen, in order to continue proceedings as rapidly as possible, I am going to use the gavel when your eight minutes are up. If you could finish as soon after that as possible, we will go on to the next questioner. The first name on my list tonight, left over from the other night, is Mr. Chappell. He has another engagement this evening. Next on the list I had Mr. MacDonald and Mr. Pringle, so I am now open for new questioners.

Gentlemen, before we continue, we have with us tonight the Honourable Arthur Laing, Minister of Public Works. I would also like to welcome to the meeting Colonel Edward Churchill; Mr. Williams, Senior Assistant Deputy Minister and Mr. Lalonde, Deputy Minister, Department of Public Works. Welcome gentlemen; it is a pleasure to have you with us. Mr. MacLean, you may proceed.

Mr. MacLean: Thank you, Mr. Chairman, I am sure the Committee is pleased that the Minister has given us his time again this evening and that it was possible for Colonel Churchill to be here.

It seems to me that the first real blow to the possibility of a causeway being constructed was when it was found that there was such a great difference between the estimated cost of this first major portion and the tenders which were received. I would like to ask Colonel Churchill if he would try to define for the Committee the reason for this, if possible, within reasonable limits.

A layman is rather surprised at this difference and I wondered whether it was due to too low an estimate by the designers, or whether it was a case of the contractors feeling that there were factors of cost which they could not estimate closely and therefore were bidding higher to be safe. What would be the reason from a technical point of view?

Colonel Edward Churchill (Consultant, Department of Public Works): Mr. Chairman, I think the first part of this question revolves around the nature of that particular contract, the first of the marine construction packages, which was the causeway on the New Brunswick side. As everyone, I think, knows there is no really good material in the immediate environs of the crossing that can be used in the water. That meant that it became expensive to get rock for the causeway.

Second, because it was a marine job, it had an element of risk in it. The contractors felt that because of this they had to put in fairly high contingencies. There was no sharing of the risk at that time between the government, the owner and the contractors.

To answer the final part of your question, I think it was underestimated under the conditions of the tender call.

Mr. MacLean: My second question is, would it be valid to extrapolate this difference in estimate and cost as it occurred in that part of the construction to the whole thing? It would seem to me that it would not necessarily follow that the estimates for other portions were also too low, or that...

Col. Churchill: I think what took place is, in fact, what caused the hiatus. Everyone felt

that he had to look at the cause of this discrepancy more closely. I am not sure, but I do not think that anyone said that this would necessarily mean these estimates were valid or invalid. I think what they wanted to do was to investigate it, and it was at that time that they asked me to join forces with the government and try to bring in valid estimates and the tightest and lowest cost for the crossing.

• 2020

I think that what happened—and I was not there; therefore, a good deal of this is hearsay—is that they were trying to find out what the real implications of that were—hence their bringing me in to try to wring out the estimate.

Mr. MacLean: As a result of your studies in that regard, did you find the remaining estimates, in your judgement, were high, accurate or low? Is this a fair question?

Col. Churchill: The question is difficult for me to answer, because we went off on an entirely different tack. I did not go back over what they had been doing. We attacked it from very basic principles and what evolved stood on its own feet. There was not really an attempt to check old estimates, but to go right to basic principles and establish the best way to do the job, and therefore what the minimum cost would be.

Mr. MacLean: I believe, although I am speaking from memory, that consultants who were engaged in this design had studied the Chesapeake Bay crossing, and I believe there is some similarity between the two. Of course there are many reasons, ice conditions I suppose and various other causes, that would make the construction in the Northumberland Strait much more difficult perhaps than in Chesapeake Bay. But as I recall, the Chesapeake Bay crossing is considerably longer—15 miles longer I think. I do not know what the depths of the water are there, but that was constructed for \$139 million approximately, I believe. Could you give us some indication why the construction of the Northumberland crossing would of necessity be so much higher?

Col. Churchill: Technically the crossing was perhaps the most difficult marine construction operation that most people had ever heard of. This was for several reasons. One of course was the ice, and at the beginning of the job ice technology was something that was just

being put together. I suspect that one of the things that comes from the Northumberland Strait crossing project is that we now have added quite considerably to the fund of knowledge on ice and what can be expected from it in structural aspects.

The second thing was that the floor of the ocean was incredibly bad. There was not any real rock there, and you went down through 4,000 feet of the same material. There was no way of reaching good material. This material was similar to that on the shores of New Brunswick, and in fact the geologists claim that this was part of the erosion from the higher land rolling over many, many aeons of time down to the ocean, and that this material that was deposited there is the same as is seen on the shore. It is a poorly cemented material which in fact cannot really be used successfully as an aggregate to withstand the action of waves and the leaching action of the water itself. So there was a very bad foundation which meant all kinds of technical problems.

I do not know whether you really want me to go into this but, for example, we had recourse to the Casagrande Bros. and a number of others who are well versed in the foundation game, and we were not allowed to use piers that had any lateral forces on them. In other words, the obvious thing is that you expect that ice and water and wave and current impinge on a pier this way, and the force is taken up through the pier to the base. We were not allowed to calculate that way. That would be called in simple terms, "laterally-loaded piers". We could not use laterally-loaded piers because they were afraid of this wiggling motion and the material was so bad that it would rock in its socket and therefore it would eventually erode back and you would not have a good solid pier. We had therefore to design everything axially loaded. We had to translate everything so that all the forces came down straight into the pier without allowing for this wiggling action, if you like.

• 2025

That is one of the things. Another one was that we were talking about quite significant depths. In the deepest part of the strait we were down some 90 feet. Now, there are several things about 90 feet. The first is that you cannot use the normal air caissons to build piers where it is too far for men to be under pressure in these "rock hogs". I think that is the name for them. You would have great

difficulty in building underneath compressed air in a pneumatic caisson because of the depth.

In addition to that, there was an overburden of some 35 feet, so you add the 35 feet to the 90 feet and you are up around 125 feet. Then we had to go, because of the poor material, an additional 70 feet with the socket down into the floor of the ocean to get the stability that was needed.

So I think your premise is absolutely right. There is not a comparison between the Chesapeake Bay job and the Northumberland Strait crossing. And of course the material—I think the closest material was 90 miles away.

Mr. MacLean: I think my time is up, but could I ask one more brief question? To your knowledge, has any consideration—even in a very superficial way—been given to the possibility of putting the causeway in a different site, from Pictou to the other end of the island? The distance is greater. It is 14 miles, I believe. But I am given to understand that the bottom is much better, and much of it is shallower.

Col. Churchill: You said, to my knowledge. All I know is that before I got to the job there had been consideration of different types, and that they had thought of using aggregate from Porcupine Mountain and so on, and it was ruled out on one basis only—cost.

Mr. MacLean: Thank you.

Mr. McQuaid: Colonel Churchill, you worked of course on this project for a considerable period of time. Did you submit to the government a revised estimate of costs for the construction of this causeway?

Col. Churchill: Yes. I tried to be as careful as possible to effect the maximum liaison with the head office, so I submitted a number of estimates. All these estimates which I submitted went from high to lower and lower as we got closer to the problem. As we wrung out problems we were able to design much closer to the actual need, and therefore from time to time, as the estimates developed validity, I was able to inform the Minister and my colleagues of lower costs.

Mr. McQuaid: Could you tell the Committee what your estimate was that comes closest in your opinion to a valid estimate of what the cost would probably have been, had the project proceeded?

Col. Churchill: When we stopped work the estimate was \$160 million. I would like to clarify that \$160 million. If we had called tenders and if they had been awarded in March of 1969, the amount of money in those dollars, unescalated for the whole job, would have been \$160 million. If you escalated it, that would be \$175 million. If you added to it the moneys that have already been spent, the total cost of the project would therefore be \$191 million.

Mr. McQuaid: Your final figure to the Department, before you were called off the job, was in the vicinity of \$190 million. Is that correct?

Col. Churchill: I think I said \$191 million. That is right.

Mr. McQuaid: One hundred and ninety-one million dollars. Were you called off the job before your estimates were completed, before your study of the actual cost was completed?

• 2030

Col. Churchill: I do not really know how to answer that. There was so much intimate revision and contact with contractors and suppliers that we were in a continual business of doing checks on estimates. That is point one. The second thing is that I am not really sure when the decision was reached. I just kept on passing information, as it became valid, up the line. I do not know quite how to answer your question.

Mr. McQuaid: In your opinion, would the crossing have improved the economy of the Island to the point where perhaps even federal subsidies could have been entirely eliminated?

Col. Churchill: Yes.

Mr. MacQuaid: That is your opinion.

Col. Churchill: In the context of your question, that is exactly right. In my opinion that is so.

Mr. McQuaid: Did you make any estimate or submit to the government any estimate of what the annual maintenance of this causeway might be after completion?

Col. Churchill: Yes, I did.

Mr. McQuaid: Do you remember the figure?

Col. Churchill: At the time that I presented the Minister with the \$180 million figure, the total cost ended up at \$226 million over a 60-year period.

Mr. McQuaid: That is \$226 million?

Col. Churchill: That is right. In other words, if you took 60 years and you went from the \$180 million spent to do the crossing, then the maintenance cost over the years came to \$226 million. I want to just make sure that I have this put together the right way.

If I remember correctly around \$800,000 a year was the maintenance cost for the crossing. It did not mean that you would spend \$800,000 each year, because that was averaged. You do not paint every year necessarily, but if you took all the painting and the number of times you would have to paint and the number of times you would have to repair pavement and you averaged it, which is what we did, we said that this would be about \$800,000 a year or \$850,000. I am not that accurate about the figure.

If you took this and you started to add it to the cost, I believe it then came to \$226 million.

Mr. McQuaid: Have you any accurate figure, Colonel Churchill, as to how much the ferry service is costing the government each year; that is, over and above what they take in? In other words, have you any figure on the deficit of the ferry service each year?

Col. Churchill: No, I do not have accurate costs.

Mr. McQuaid: Did you make a study of that at all?

Col. Churchill: I did not make a study. I was presented with figures from another Department and I have a feeling you would get better answers if you were to ask them exactly how these things came up because I was second hand in this, not directly in it. I was presented figures.

Mr. McQuaid: Would you mind telling the Committee the figure with which you were presented; that is, the annual ferry deficit each year.

Col. Churchill: In the original incidence it rose and you see evidence of this in a report that I believe has been tabled, the Stanford Research Institute Report. I believe over the period that comes to \$742 million, capital, operating and maintenance if you add it up. I think it is on page 126.

Mr. McQuaid: That is \$742 million over a period of 60 years. Is that right?

Col. Churchill: Yes.

Mr. McQuaid: Yes.

Col. Churchill: That is operating, maintenance and capital, but it does not take into account revenues and it does not outline the deficit. In other words, it does not describe the deficit. It shows you the operating maintenance cost. It does not show you the revenue; therefore, I do not really know what the deficit is. The figures that are bandied about I get from other departments. You should ask them.

Mr. McQuaid: I wonder, Mr. Chairman, if I could divert just for a moment to the Minister and ask him if from his knowledge he could give us the annual deficit of the ferry system between Port Borden and Cape Tormentine.

Hon. Arthur Laing (Minister of Public Works): The other night when I was giving evidence here, I think I quoted the figure that I had heard. I suggested it was between \$5 million and \$6 million. I was lead to understand at the present time it was between \$5 million and \$6 million.

Mr. McQuaid: Per year?

Mr. Laing: Yes, per year.

Mr. McQuaid: Colonel Churchill, may I ask you whether, after having made a study of the whole situation, you consider that our ferry service is a satisfactory alternate means of communication between the Island and the mainland?

• 2035

Col. Churchill: Are you asking for an opinion or are you asking for a technical—I am not quite sure I understand your question? If you are asking for an opinion I have always had great faith in this crossing.

If you are asking for a technical study of this, I only have part of the picture which I think everybody knows. I did the estimates on how we would cross it and then in the business about choosing between the ferry and the fixed crossing a number of departments were involved, each with their own input.

As far as I am concerned, I think everybody knows and I reported so to the Minister, that I consider this project to be economically feasible and technically viable.

Mr. McQuaid: That is the crossing project?

Col. Churchill: Yes.

Mr. MacLean: Could I ask a brief supplementary? Was the design of the causeway such that it would handle any foreseeable traffic projected into the future?

Col. Churchill: No, if we had pursued the crossing project as it was presented in the recommendations that we made to the Minister, it would have had to have been increased at some time in the future for additional lanes, because the final recommendation that we made to the Minister was two lanes convertible to four. Some time in the future, I think somewhere beyond the year 2000 the extra two lanes would have had to have been put in.

Mr. MacLean: Could you give us an estimate of the carrying capacity per day or whatever it is of the design?

Col. Churchill: We were talking about 1,500 vehicles per hour both ways.

Mr. Macquarrie: Five thousand?

Col. Churchill: I beg your pardon?

Mr. Macquarrie: Five thousand.

Col. Churchill: No, 1,500.

Mr. Macquarrie: Fifteen hundred, I am sorry.

The Chairman: I have on my list from the beginning; Messrs. MacLean, McQuaid, Macquarrie, Gilbert, Deakon and Cullen. I would like to mix these up, so I am calling upon Mr. Deakon next and then Mr. Macquarrie and then Mr. Gilbert.

I will call upon Mr. Deakon next, then Mr. Gilbert and then Mr. Macquarrie.

Mr. Deakon: Has Mr. McQuaid's time expired?

The Chairman: Yes.

Mr. Deakon: I would not want to take any of his time. I just want to continue on, Mr. Chairman, with the questioning by my hon. friend here.

The Chairman: Mr. Gilbert has a point to make.

Mr. Gilbert: Before Mr. Deakon commences, I would gladly yield to Mr. Macquar-

rie because he is a Maritime member and I think that Maritime members should be given priority.

Mr. Deakon: I agree.

The Chairman: That is fine with me. I am just trying to spread it around a bit. Mr. Deakon?

Mr. Deakon: I will agree. Just to further carry on with the questioning, Mr. Chairman, of the previous member. Can you tell us, Colonel Churchill, what is the distance for this causeway?

Col. Churchill: The water crossing is 42,300 linear feet.

Mr. Deakon: What is the greatest depth that you would have to...

Col. Churchill: The maximum water depth is 96 feet and then you hit the overburden as I explained before, so the clear water maximum depth is 96 feet. Average water depth, if you want that, is 53 feet. The overburden varies from zero to 40 feet. The average overburden depth is 15 feet.

Mr. Deakon: What are the water currents like in that area?

• 2040

Col. Churchill: The design current velocities, the peak spring tide velocity in knots was 2.1 and the velocity due to a combination of a large tide with a rare storm surge would be 3.2 knots.

Mr. Deakon: How much of this project did you complete before it was stopped? What percentage?

Col. Churchill: We spent somewhere around \$17 million out of a total of \$191 million if we could have gone ahead.

Mr. Deakon: Well that is the cost of the amount that you completed. What percentage of the physical projects were completed?

Col. Churchill: We had six projects on the ground which totalled \$5.5 million.

Mr. Deakon: Colonel Churchill, I understand that you yourself have not too much information on this ferry other than what you have been told, but I would appreciate it if you could assist us with some of the questions I wish to ask in this regard. I understand your evidence may be hearsay but unless

some other member of the group is able to answer more correctly I would like to get some answers from you.

How many people did the ferry carry on an average per day for any given time, to make it simple?

Col. Churchill: I may have something here on this and I may not—I do not know.

Mr. Macquarrie: Mr. Chairman, while the witness is looking through his notes may I point out that for a good many years our national park, in which the Minister is very interested and has been very helpful, has had for the major part of the last decade over a million visitors now, some of them are natives like myself. But it is well over a million. The Colonel may have more precise figures. It is pretty high. I just mention this in the interstice without interfering with the witness. That is what the national park figures show.

Mr. Deakon: Is there a possibility of our obtaining figures on the number that the ferry carries, say, for a given year?

Col. Churchill: This would have to be obtained from the Department of Transport, Mr. Deakon. I will ask Mr. Laing to reply to that.

Mr. Laing: Those figures could be made available.

Mr. Macquarrie: They are very high, Mr. Chairman, and escalating pretty rapidly.

Mr. Laing: I think Mr. Macquarrie is correct. However, the peak point is three months in the year, . . .

Mr. Deakon: Right.

Mr. Laing: Which accounts for 72 per cent of the ferry traffic. If my arithmetic is good, there are 1,200,000, which is about 3,600 a day. I would suggest that probably on certain days in the summer there might be double that number.

Mr. Deakon: Were there not five ferries on?

Mr. Macquarrie: It is half of June, half of September and the two months in between—tremendous.

Mr. Laing: Some of them were making five round trips a day. There are five ferries and two more at Wood Island.

Mr. Deakon: How many people would these ferries employ to operate these ferries?

Col. Churchill: Is that question directed at me?

Mr. Deakon: Yes, if you can answer it. I am interested in weighing both situations.

Col. Churchill: This information is generally data that is accumulated by the Canadian National Railway and then transmitted to DOT, so we would not necessarily have that information.

Mr. Deakon: I would like to obtain this information too, Mr. Chairman.

Could you tell us whether the ferry service satisfied the demand?

• 2045

Col. Churchill: Are you asking for an opinion?

Mr. Deakon: I want the facts. It did or did not. I do not want any opinions. I want to know if it did or did not—and that is all I want to know.

Col. Churchill: I do not think these things are capable of having a single resolution. If you wish to wait a couple of hours and it does not bother you, then it is sufficient.

Mr. Deakon: Sometimes you have to wait at the Peace River bridge across to the United States for a couple of hours, so it does not make much difference. I mean if they are anxious to get there and have travelled 2,000 or 3,000 miles they will wait two hours.

Obviously I will have to get these answers from another source. Thank you, Mr. Chairman. I prefer to hear the Eastern members.

The Chairman: Mr. Macquarrie.

Mr. Macquarrie: I do not want you to sound presumptuous, because the Minister and the Colonel know these things. It happens, I think, Mr. Deakon, that the greater the increase in the number of people who use the ferry service the greater the per capita cost and the absolute cost on the ferry service. I know the Minister knows this. This is one of the facts of life with which we have to deal. One would think that the more people that use the ferries the lower would become the cost per person. However, that has not proven to be the case—in fact, the opposite has proven to be the case. I just mention this—and I am not arguing it—as one who has studied these statistics.

Mr. Deakon: Mr. Chairman, to enunciate further on this, my main point of asking

these questions was to compare the relative values of the causeway and the ferry service. Also I asked how many people this ferry service employed—there are other questions I could have asked—with the thought of what we are going to do with them if there is a great number. There is enough trouble on the East Coast now in placing people in employment. But that is neither here nor there—I would prefer to hear the Eastern members.

The Chairman: Mr. Macquarrie.

Mr. Macquarrie: Mr. Chairman, may I thank you and the members of the Committee for the courtesy accorded me in interrupting once in a while. I am very sorry to be late. If I cover any ground that my colleagues have covered I want to apologize and I want you to tell me immediately if it has been covered.

I would like to ask the Colonel, whom I regard as the leading authority in this matter, a few questions.

I was impressed by the Stanford Research Institute findings which suggested that it might be economically feasible for the causeway to be built with construction beginning several years hence, like 1977 and 1978. Is it your feeling, Colonel, that technology and other related factors would advance in the ensuing years, that the causeway could be built more cheaply in 1977 or 1978, or could it be built more cheaply now?

Col. Churchill: My opinion is, not significantly. The reason for this is that when we ended up we were talking about 896 foot spans between 42 piers. Well, the difference and the interplay between the cost of piers and the superstructure is not going to vary the cost that enormously should they find ways in the future to increase the span, say, to 1,200 or 1,300 feet—clear spans without guys. So, in my opinion, there would be reductions, because there always are. But I cannot see in the next few years that there would be significant changes.

Mr. Macquarrie: Mr. Chairman, may I ask the Colonel if, by God's great blessing, the causeway did come under construction immediately what, in your opinion, Colonel, would be the total figure required to complete the job—starting tomorrow morning at 6 a.m. at which time a good Presbyterian should start.

Col. Churchill: I gave that figure a little earlier.

Mr. Macquarrie: I am sorry if I am asking you to repeat yourself, sir.

Col. Churchill: I will try and repeat it in the same way.

I said that the latest valid estimate which I provided the Minister was \$160 million, if we had gone to tender and awarded contracts for the beginning of this fiscal year. To that you would have to add the escalation which would bring that to \$175 million. And if you added to that the historical costs, the costs already incurred, then the total cost of the project would be \$191 million.

• 2050

Mr. Macquarrie: And did anyone ask you, Colonel, the difference between that figure, which is a much more comfortable one to me, and the \$300 million plus figure which was evolved some months ago on the basis on the tender costs for what I might call the first section?

Col. Churchill: The \$300 million figure was not mine, I do not know where it came from, and I think that I cannot make any comment other than to say it is a silly figure. I do not know where it came from.

Mr. Macquarrie: Silly because it is exaggerated.

Col. Churchill: Because it is not true—and it certainly did not come from us.

Mr. Macquarrie: In your view, it is an exaggerated figure.

Col. Churchill: Yes.

Mr. Macquarrie: Thank you very much, Colonel. That is very helpful.

Could I ask you one more question and I will pass on to my colleagues? I would like to say, Mr. Chairman, and especially in reference to Mr. Gilbert that we appreciate your courtesy and we do not want to think this is a P.E.I. matter or P.E.I. interests. It is a much more national thing. Do you think, Colonel, that the . . .

Mr. Gilbert: Mr. Macquarrie, I appreciate that and I think that most of are Canadian nationalists right from B.C. to Newfoundland, but we thought that you had a special knowledge as Maritime members and we were wanting to give you a preference.

Mr. Macquarrie: I want to say I appreciate it very much. Colonel, I do not want to put

you in contradistinction to any other experts, and I may say that you are my favourite expert, but .

Mr. Barrett: Would you call a doctor please; I think this man is ill.

Mr. Macquarrie: I have been watching this man for many years and in many features. Would you be prepared to say whether you adjudicate the traffic projections in the Stanford Research Institute report as low, as normal, or as high.

Col. Churchill: I have advised the Minister on more than one occasion that I consider the traffic projections from the Stanford Research Institute low; not grossly low, but low. I am much comforted by the fact that having said this it was proven to some degree by the figures of the traffic in this past year, 1968, which were greater than the interpolated figures that you would get from the Stanford Research Institute report. In fact, it is lower than what actually happened in this past year.

Mr. Macquarrie: Before I pass, Mr. Chairman, may I say, "Hear, hear."

The Chairman: Mr. Gilbert.

Mr. Gilbert: Thank you, Mr. Chairman.

Mr. McGrath: I wonder, Mr. Chairman, are you going to pursue this subject, Mr. Gilbert, because I just have one or two brief questions?

Mr. Gilbert: I will pursue them.

Mr. McGrath: Oh, fine, thank you, I thought you were going to start a new subject.

Mr. Gilbert: Mr. Chairman, I think probably I should direct my first question to the Minister. Colonel Churchill has said that the figure of \$300 million is a silly figure and he set forth a figure of \$191 million, which on that basis he has probably said that the project is economically feasible and technically viable. I wonder, Mr. Minister, if you can tell us just where that figure \$300 million came from?

Mr. Laing: I do not know whether the Colonel and I are talking about the same thing or not, but at one time there was an exceedingly high figure when it was contemplated that we were going to build a railway along side. This, of course, was a much more expensive structure than a two-lane highway.

We got it down to a two-lane highway. It was contemplated at one time that we would be building a railroad and four lanes. Whether this is where it came from I cannot tell you, but it was a very high figure I recall.

Col. Churchill: The figure I was talking about was the project that we were designing, not the project that had happened before I got on the scene because I know nothing of that. It was not the figure that the Minister was talking about. The newspapers sometimes talked about the project that I was doing as \$250 and \$300 million, and that is silly. The Minister is also right that if we had done the railway and done the tunnel that was originally thought of, I think maybe it could be \$300 million. However, the figure I said was silly was the newspaper reports about the project I was designing. I never said that.

Mr. Laing: May Mr. Williams have a word, sir?

• 2055

Mr. G. B. Williams (Senior Assistant Deputy Minister, Department of Public Works): I think on the opening night of the Committee on this subject this same figure was raised in relation to the original estimate of costs being at \$25 million for the two-mile New Brunswick causeway which was the tender price that was received at that time. This was in March 1967, I believe. What I said was that if the same ratio of underestimating had applied to the balance of the project it would have been in excess of \$300 million, and that is correct.

Again referring to the project at that time, it consisted of a rail and highway crossing without the present proposal of carrying the rail service on a ferry. I also said that this was looked at in relation to the costs that were bid at that time for the caisson at the end of the causeway, the rock prices, and the risk factor which the contractors put in at that time.

Mr. Gilbert: Colonel Churchill, am I right in assuming that your figure of \$191 million was on the basis of the two-lane highway would could have later been expanded to the four-lane highway? Is that right?

Col. Churchill: That is right.

Mr. Gilbert: In the statement of the Minister at the last meeting he gave a figure of \$213 million on the project that you are working on. So you have a spread of roughly \$25 mil-

lion; the difference between \$191 and \$213 million. Would you care to commend on that spread?

Col. Churchill: I think the Minister should answer that.

Mr. Gilbert: All right, fine. I will have the Minister answer that then.

Mr. Laing: That was based on a quotation which we had received of \$180 million with the acceleration and with the cost of the work already done. I think Mr. Williams has those figures. That was the way it was computed. This was at the time that we were given an estimated cost of \$180 million, and I think if you work that out it comes to \$213 million.

Mr. Williams: That is correct.

Mr. Gilbert: Thank you, Mr. Minister.

Mr. Macquarrie: As a supplement, may I ask if the \$191 million envisages a causeway without rails with two lanes, and in effect the Prince Edward Island Railway station would be in Cape Tormentine?

Col. Churchill: The project in which these estimates were developed was a two-lane bridge with a causeway at the New Brunswick side only, no rail, and convertible to four lanes at some future date.

Mr. Macquarrie: We pick up the rails on the New Brunswick side. There would be no rails on the causeway itself?

Mr. Williams: There would be rails on the causeway. Rail traffic would continue to be carried on the ferry.

Mr. Macquarrie: That of course is a judgment that would have to be worked out with the truckers and other carriers, would it not?

Mr. Williams: That is right.

Mr. Macquarrie: I think the Prince Edward Island people might be prepared to accept that their nearest railway station would be at Cape Tormentine if they had a causeway. Whether the Government of Canada would want to throw in extra ferries would be their own judgment. If we had a direct link to Cape Tormentine I think there might be a good deal of satisfaction. That is an observation.

Mr. Gilbert: Colonel Churchill, I will direct another question to you. The Minister has said that we pay a subsidy of between \$5 and \$6 million a year am I right in assuming that

one of the reasons why you say this is economically feasible is because of the subsidy that we pay compared to the capital costs of the project of \$191 million? Is that the major reasons why you say that it is economically feasible?

Col. Churchill: No. I say it is economically feasible because in my opinion it has been demonstrated that the benefit-cost ratio is in favour of building a fixed crossing when you align the ferry to the fixed crossing. However, it is not a straight thing as far as I am concerned; it is a benefit-cost ratio.

• 2100

Mr. Gilbert: It is benefit-cost analysis that has been made and from that you have made the judgment that it is economically feasible?

Col. Churchill: That is right.

Mr. Gilbert: Colonel Churchill, would the costs increase significantly if we were to delay the project? If it were delayed for 10 years what would you think would be the projected cost? At the moment you say it would be projected cost? At the moment you say it would be \$191 million. What would be the cost in 10 year's time?

Col. Churchill: Are you talking about constant dollars or of escalating dollars?

Mr. Gilbert: That is right.

Col. Churchill: It is rather difficult to talk in those terms. You would have to start completely from the beginning again, with the plans and specifications. You would therefore have the design costs over again in the sense that it would still take you somewhere between six months to a year to read into the previous things, to check what was valid then against what is valid now; and you might be talking there in terms of around \$4.8 million.

Mr. Gilbert: You are saying that if we start now the design costs have already been absorbed; whereas you would have to incur that cost again at the later date?

Col. Churchill: Yes; I do not think you could pick up the reins and just go. You would have to spend a period of time in reading, rechecking and revalidating techniques against current machines and equipment, and so on. I say that that would take you about a year and might cost about \$4.8 million, on something like that.

Mr. Gilbert: Colonel Churchill, I have one final question. You say that a cost benefit study has been made and that that gave you benefit analysis is that? Is that the Stanfield—no, Stanford—I had better be careful.

Mr. Barrett: Watch your language! If you are not careful you will be called one of the unruly ones, too!

Mr. Gilbert: Mr. Chairman, would you please keep that member in check!

Col. Churchill: If I correctly, understand your question, you are talking about the Stanford Research Institute Report?

Mr. Gilbert: All I want to know is the source of your information on the cost benefit analysis from which could you draw the inference that it is economically feasible.

Col. Churchill: Basically, it is the Stanford Research Institute Report, with the proper capital cost cranked into it.

Mr. Gilbert: Thank you, Colonel.

The Chairman: Mr. Cullen?

Mr. Cullen: Colonel Churchill, I am just trying to understand the sequence here. As I understand it, there was a four-lane causeway and then allowance for this railway, as well. Work was done on that, and then tenders were called; and the tenders for the first phase were abnormally high. Were you called in at that stage of the game?

Col. Churchill: That is right.

Mr. Cullen: After you were called in did you receive instructions to redesign this back to two and eliminate the rail?

Col. Churchill: Not at all; I was told to investigate every possible combination. In fact, one of the instructions I received was that I was to work out what would happen with and without rail, or with helicopters—with everything. That we did.

Mr. Cullen: In the final analysis your ultimate figure was for a two-lane causeway, but designed to become eventually four-lane, using the same base, for want of a better term?

Col. Churchill: Are you asking me exactly how it ended up?

Mr. Cullen: Yes?

Col. Churchill: It ended up in the recommendation that I made to the Minister. I will just give you them exactly. Perhaps that would be worthwhile. The \$191 million that I talked about would have done this: 3,612 feet of causeway on the New Brunswick side only; 38,528 feet of two-lane highway bridge convertible to four lanes, two spans of which with 120 feet clearance for shipping; four and one half miles of approach road in New Brunswick; 3.3 miles of approach road in Prince Edward Island; 4.9 miles of railway in New Brunswick; three highway grade separations; an administration building; a toll plaza; and landscaped areas on the Prince Edward Island and New Brunswick shores. That was what the \$191 million would have covered.

Mr. Macquarrie: All that for \$191?

Mr. Whicher: Does that include the interest on the money as you build it, Colonel Churchill?

Col. Churchill: These are capital expenditures.

Mr. Whicher: I am sorry to interrupt here, but during the first year would it be fair to say that you would have spent \$25? Roughly, how long would it take to build this?

Col. Churchill: About five years.

Mr. Whicher: Would you have spent \$35 million the first year?

Col. Churchill: I do not think you could average it out, but if I understand what you are trying to get at you would have a cash flow that would go like this and then level out and drop off. But it would not be the same each year, obviously.

Mr. Whicher: No.

Col. Churchill: The first year it would go a little slow.

Mr. Whicher: Sir, supposing it were slow, do you think it would be fair to say that we would spend \$25 million...?

The Chairman: I would like to go back to Mr. Cullen. Time is being taken from him.

Mr. Cullen: With the greatest respect, I think he is asking a better question.

Mr. Whicher: If you let me carry on we will get at the cost of this thing. Because cost without interest is simply not cost.

Mr. Cullen: I do not know whether or not he was looking over my shoulder and reading my notes, Mr. Chairman, but this is the point I had in mind.

In your costs did you take into consideration that, over the five- or six-year period it would take to construct the causeway, the ferry service would also have to be run?

Col. Churchill: During the time of the construction?

Mr. Cullen: Yes.

Col. Churchill: The ferry service was contemplated as continuing.

Mr. Cullen: From the time you were retained for this job, Colonel Churchill, you worked full-time on the design of this structure that you have indicated to us, on cutting down the risk factor and estimating the amount of material that would have to be brought from another source. Was this engineering end of it your full-time occupation?

Col. Churchill: It was my full-time occupation, but we did not start off doing the design. I started off by doing an investigation of every conceivable way of making that crossing, and then weeding out the ones that were obviously too expensive, in that they would amount to many hundreds of millions of dollars; some went up to \$700 million, for example. Eventually we came to the point at which we could make a recommendation to the Minister. And this is one which is as low as we could get it.

Mr. Cullen: Yes. My concern is that in answering the questions of my colleague, Mr. Deakon, you seemed to be somewhat hazy about the costs of operating the ferry service, and the amount of the deficit and the revenue involved. Did you come up with an answer that this would be economically feasible? When did you do your study on the economics of one view versus the other, for example?

Col. Churchill: The point is that the appropriate department had the input on what would be the deficit on the ferry operation. They gave that information to the Stanford Research Institute people. Therefore, when I say it is economically feasible, that is based on information provided to Stanford by another department.

Mr. Cullen: And this you had studied as part of your...

Col. Churchill: I looked at it, and it seemed to be based on the historical costs of operating and maintaining; and, forecasting from what the ferries did and what they thought they would do, I thought that was not untoward.

• 2110

Mr. Cullen: We heard evidence at the last meeting, Colonel Churchill, that a good deal of the preliminary design work and the work that has been done could be used in 10 year's time. But you say it would take a year to update this, and at a cost of \$4 million?

Col. Churchill: Many studies were done, and an input from those studies in different government agencies, and perhaps in private industry and internationally. There are some real legacies from the causeway.

For example, there is the Marine Construction Safety Code. There was none in the world, and we did one. I am sure it is going to be very useful to many different kinds of people. It should certainly be useful to DOT in developing safety procedures. We also did some work on it with Lloyd's of London. It has an impact on insurance, the studies on insurance, so in that context I think there are many things that were done which will have lasting value, depending on whether they are put to use fully, or just a little or not at all. I cannot legislate for that. There certainly are some things that have value. Technologically, the ice report is another one.

I think some of the administrative things that were done, the Department might find useful from time to time, such as exploring, sharing risks with contractors; such as reducing contingencies; such as working out a flat rate for workmen's compensation with the provincial boards, so that the contractor knows from start to finish over the five years if there is a set rate for this compensation. I think those kinds of things are useful.

When you come to the technical side, the calculations for the size of the members and the whole mystique of putting together plans and specifications, of course things will change. No engineer can accept going to someone else's partially completed designs and say: "I will pick up from there." He just cannot do it. He has to read into it to begin with; he has to satisfy himself that he understands everything about it so that if he carries the design forward at least with the original intent in relationship to the kind of techno-

logical environment he is going to be in 10 years from now. I know this sounds awfully complicated, but it really is like that.

Mr. Cullen: Did you knock me down, Mr. Chairman?

The Chairman: I did not yet. I have permitted you an additional minute, because there were so many interruptions in your time.

Mr. Cullen: That is right.

The Chairman: I now have on my list Messrs. McGrath, Langlois, Whicher, Harding and Macquarrie starting the second round. Mr. McGrath.

Mr. Deakon: Mr. Chairman, I would like to clarify something if I may. I have an article here which gives some of the information I requested and I think it might be advantageous to the Committee to have it.

The Chairman: Mr. Deakon, unless you are raising a point of order, I could not let you proceed.

Mr. Deakon: No, I just want to clarify a few issues that is all.

The Chairman: On the second round, yes, I will put you on at the end. Mr. McGrath.

Mr. McGrath: Thank you, Mr. Chairman. My question is directed to the Minister, because this subject is of great interest to the Atlantic Provinces generally, not especially to Prince Edward Island recognizing their special interest in the subject. Last January, Mr. Laing, the Standing Committee on Transport and Communications was authorized by Parliament to look into and study the transportation problems of the Atlantic Provinces. In this connection the Committee travelled to the four capitals of the Atlantic Provinces and heard numerous briefs, in excess of 150.

• 2115

During the course of our one day hearing in Charlottetown, the first submission we received was from the Government of Prince Edward Island, and the Government of Prince Edward Island, through the Premier, indicated that the whole substance of their submission was in support of building the causeway. Naturally this fell within the ambit of our reference to study the transportation problems of the Atlantic Provinces. The Committee was no sooner back in Ottawa—we did not have an opportunity to study evidence

which was then being printed—when the government announced that it was not going to proceed with the causeway.

My question, sir, is this: How do you reconcile the government making such an announcement before the Standing Committee on Transport and Communications, which in the first instance had been authorized by Parliament to study this very problem, and have an opportunity to make its recommendations to Parliament?

Mr. Hymmen: Mr. Chairman, I do not think this question should be asked of Colonel Churchill.

Mr. McGrath: I am not asking Colonel Churchill, I am asking the Minister.

Mr. Laing: As I said when I gave evidence the other night, the overwhelming matter leading to a decision by the government did not relate to the efficacy of building the causeway, but to the very heavy cash requirements that would be required in the next three years. This is the basis upon which it was decided to cancel out at this time.

Mr. McGrath: Surely Mr. Laing the government could have waited a few more weeks until the Transport Committee had a chance to make its recommendation. The Committee had travelled to the Atlantic Provinces at considerable public expense on the instructions of Parliament to study this very matter, and before we had a chance to even assess or study the evidence we had received, including the briefs we heard in Charlottetown, and more particularly the brief of the Prince Edward Island Government, this announcement was made. Many members on the Transport Committee, notwithstanding party affiliation, found it difficult to understand how the government could make this announcement; thereby cutting the legs out from under the Committee, which was about to make a recommendation in this regard. Why was there such haste to announce the cancellation of the causeway project?

Mr. Laing: There was never any particular haste in respect of this causeway, because it has been talked of for many years and it has actively been worked on for a great number of years. A great deal of work started in 1961 and 1962, so there has been no great haste about it. The government has to take the responsibility for making decisions in respect of the financial outlays, and the decision was taken because of the very great financial outlays required.

Mr. McGrath: Notwithstanding what the Minister has just said—I understand a considerable amount of public funds had already been expended—surely it would have been prudent on the part of the government to wait until a Committee of the House of Commons, which had been instructed or authorized by the House to make a study of this matter, had a chance to make its recommendation. It is conceivable that the Committee could have recommended against the causeway, although that seems to me to be most unlikely.

Mr. Laing: There were a great number of other submissions concurrently with that including submissions from the Government of Prince Edward Island which we were hearing, too.

Mr. McGrath: Well I am talking about the submission from the Government of Prince Edward Island which was a very strong submission in favour of the causeway.

Mr. Laing: They had made the same submission to the Government of Canada as they made to the Committee, or like submissions.

Mr. McGrath: I will not pursue it, Mr. Chairman. My next question is related because we also heard a submission in this regard as well; the possibility of amortizing the capital cost of the causeway by imposing tolls. Did the government take a serious look at this aspect of it, bearing in mind the substantial expenditures that the government makes yearly in subsidizing the ferry service?

Mr. Laing: I recall very distinctly, bearing in mind the very considerable subsidy that is paid on the ferry service that to take the total receipts and put them against a bridge was not a material source of revenue.

Mr. McGrath: It seems to me—I am speaking from memory and I stand to be corrected on this—that the figure of 60 years was used to indicate the amortization period during which the causeway could be paid for by the imposition of tolls. That to me would not be unreasonable, more particularly because when the government announced its new policy they also concurrently announced the building of additional ferries which will mean additional subsidies. So the policy of the government to me seems to be rather paradoxical here.

Mr. Laing: You are advocating a very heavy increase in tolls, is that right?

• 2120

Mr. McGrath: No, I am asking you why was the practical proposition...

Mr. Laing: Merely moving the receipts from the ferries as at present and putting them against a bridge is not material. If you are going to make a material contribution to the cost of the bridge by way of tolls, the tolls would have had to be doubled or tripled.

Mr. McGrath: Would you explain that, Mr. Laing?

Mr. Laing: The total receipts from the ferries is small, because of the...

Mr. McGrath: I am not talking about the receipts from the ferries...

Mr. Laing: I am.

Mr. McGrath: ... I am talking about the receipts plus the subsidies.

Mr. Laing: You are talking about a toll on the bridge. What toll would you put on the bridge greater than the receipts from the ferry.

Mr. McGrath: Surely you cannot look at it in the narrow context of the receipts from the ferry. You have to look at it from the context of the receipts from the ferry plus the subsidies that the federal government pays to the operation of the ferries, do you not?

Mr. Laing: Do you mean that we should transfer that into a toll? You would have very heavy complaints.

Mr. McGrath: I will direct this question to Colonel Churchill. Would it be a practical proposition to amortize the capital cost of the causeway and of the ferry by the imposition of tolls?

Col. Churchill: I do not think that I can answer that with any real sense; that really becomes a government decision. There are too many unknown factors in the Maritimes for me to jump in and say, "Yes, you do this thing here with a toll." First of all, there has not been an over-all comprehensive transportation study as to how goods should be moved back and forth in PEI, Nova Scotia and New Brunswick; therefore, I cannot answer the question. I just do not know. I do not think that anyone does.

Mr. McGrath: Let me put the question to you in another way. Has there been a submission from private entrepreneurs to build the

causeway using the method of collecting tolls to amortize the cost, with government assistance?

Col. Churchill: Yes, there was a proposition put forward by a number of contractors which included a 50 per cent increase over the present toll rate on the ferries, if they had over a 60 year period. This is how they put together their proposition.

The Chairman: Mr. McGrath, your time is up.

Mr. McGrath: May I ask one more question, Mr. Chairman? Of the propositions or the presentations that you received from private entrepreneurs, did you consider any of them to be realistic?

Col. Churchill: I passed them on to the Minister with some comments and they were then handled at the government level.

Mr. McGrath: As an engineer, did you yourself consider them to be realistic and feasible?

Col. Churchill: Yes, I did, sir.

Mr. McGrath: You did.

Col. Churchill: As an engineer, I did. In other words, did I consider it technically possible to do this?

Mr. McGrath: Also, was it economically feasible?

Col. Churchill: Well it was the same cost as I have already given you so the same cost as far as the construction, not the financing. Somebody asked the question about the financing. We have never talked about the financing but the cost was the one that I had estimated so therefore as far as I was concerned sure it was feasible but whether the financing of it was acceptable, that was not really something that I could add much to.

The Chairman: Mr. Hymmen, I apologize for missing you earlier. I have added you to the first list which is not altogether encouraging. Mr. Langlois is the next one on my list; perhaps he would like to switch with you at this time.

Mr. Hymmen: I only have two short questions.

Mr. Langlois: I do not want to be switched off.

Mr. Hymmen: Many of my questions have been answered. However, I think, that Colo-

nel Churchill answered Mr. McQuaid earlier saying that the billing of the causeway would eliminate subventions. What did you mean by that sir? Was that your answer to Mr. McQuaid's question or to someone else on that side?

Col. Churchill: Subventions?

Mr. Hymmen: I am sorry, subsidy was the word.

Col. Churchill: Do you mean the subsidies to the ferry?

Mr. Hymmen: That is what I am trying to get at. Is it only the subsidies to the ferries that you are talking about, or the subsidies to the Province of Prince Edward Island?

• 2125

Col. Churchill: In regard to the question that was asked, I understood that we were referring to a government subsidy to the existing ferry system; my reply to that was that I am not really au fait with it. I have received something from another department. Whether or not it is valid, I do not know; and I really mean that. I do not like to say that this is the case unless I have personally put it together. The Minister then replied, saying that the figure that we bandied about on the historical business of subsidies to ferries was \$5 to \$6 million. That was what we had said here; however, we were talking about the subsidy to the ferry, not about subvention.

Mr. Hymmen: I realize, sir, that your job was to co-ordinate the engineering work that had been done in order to proceed with the building of the causeway. Although questions have been asked to you concerning other directions. I do not know whether or not it is fair to ask this, however, in your opinion will the building of the causeway solve all the problems of the Province of Prince Edward Island?

Col. Churchill: No, it would not solve all the problems. However, in my opinion the crossing is a good thing for the Maritimes.

Mr. Hymmen: I think we all agree that it is a good thing. It may be a question of timing. In my reading of the evidence before another committee, which was mentioned earlier, it seemed to me that the implication was, "Give us the causeway; that is all we want."

Another question I would like to ask, and again it may be out of your jurisdiction, is do you feel that the Government of Prince

Edward Island erred in entering into an agreement with the federal government which involved \$225 million of federal funds and \$500 million of their own funds over the next 15 years, for other areas than the causeway, for regional development?

Col. Churchill: What is your question about that? You want me to comment on what aspect of it?

Mr. Hymmen: I am just trying to determine whether you agree with the opinion that has been publicized: do you think that the causeway is the answer to all of the problems in the Maritimes?

Col. Churchill: I guess the solution to answering that question is to say that I was not party to, was not involved in, and was not asked as to what should be chosen among many. All I know is that in the narrow sense, the crossing was a good project; then the government had to make up its mind as to what it wanted to do. You heard the Minister say that they had to select on cash. I have nothing further to add to that.

Mr. Hymmen: You have mentioned the Stanford Report and at least one member of the Committee has a copy. The rest of us have not been able to acquire it because it was just tabled. Is it not true that the Stanford Report was based on assumptions—as I say I have not read it—that the final recommendations were based on various assumptions to start with?

Col. Churchill: Yes, I think that is true of any economic report; you have to make assumptions. There were assumptions made on technical things, on financial things, on cost of living indexes and on multipliers and so on. You are quite right. The whole thing is based on the assumptions which are stated in it.

Mr. Hymmen: Thank you, Mr. Chairman.

The Chairman: Mr. Langlois.

Mr. Langlois: Colonel Churchill, first of all I would like to commend you very highly for the fine job you did at Expo. I am sure that if the causeway was proceeded with by you that you would have built a very good causeway in a short time.

You made mention a little while ago of certain costs, over 60 years, for the causeway. Did I hear correctly when you said \$260 million?

Col. Churchill: No, I said the cost associated with building it; that means that there is nothing in there concerning interest charges, carrying charges, in the sense of what will it cost you.

Mr. Langlois: Well, that is what I am getting at. Is it \$260 million?

Col. Churchill: No, it is \$191 million in the context that I have just said. Now, if you add . . .

Mr. Langlois: Yes, but regarding over 60 years, you mentioned another figure.

Col. Churchill: That is \$226 million.

Mr. Langlois: \$226 million, that is for the 60 year period.

Col. Churchill: However, there are no financing charges included in that.

Mr. Langlois: No, so what would have been the financing charges over the 60 years?

Col. Churchill: I do not know how to give that to you. If you are discounting cash flows, for example, at the end of 60 years, under a certain set of circumstances—because the circumstances change, the value of the money and how much the interest rate should be and so on—the government would make \$41 million if the tolls are 50 per cent higher than they are now.

• 2130

Mr. Langlois: That is put in the tolls.

Col. Churchill: That is right.

Mr. Langlois: Yes, but I do not think it is a fair comparison to what you said a few minutes ago about the total cost of ferries for 60 years being over \$700 million, not even accounting for the revenues. If we want to spend something I think we should start in the same set of books, not the sales that we carry out, to show the real profits of the government.

Col. Churchill: The cash outlay for the government, in accordance with the information that was given to the Stanford people from the department responsible, over the period in capital outlay and operating and maintenance costs, without interest charges, would be \$742 million. Over the same period and for the same kind of money, \$68, the outlay for the fixed crossing would be \$226 million. They are directly comparable but they are not financially comparable because the discount of cash flows are different. One has a

massive capital input at the beginning and the other has capital costs over a very long period, so the discount of cash flows are quite different, but the outlays in 1968 dollars are exactly as I have said, \$742 million and \$226 million.

Mr. Langlois: You will agree that that makes a big difference. The causeway had to be paid in four or five years, whereas in the 60 years the last ferry may be about 58 years from now, and there would only be two years' interest on the last one.

Col. Churchill: That is right. I did not wish to say that I considered this thing to be economically feasible and technically viable on those figures. I said that in my opinion it was so, because of cost benefit analysis.

Mr. Langlois: You also mentioned an average maintenance cost of \$800,000 a year and a little later on, in elaborating on it, you mentioned paint and repairs to paving and new paving. You did not mention anything about repairs to structure and fill that would either be washed out by the waves or the ice flows, or anything like that. Is that included in the \$800,000 or is it not taken into account?

Col. Churchill: No, it is the total cost. For example, we had talked about using tetrapods on the causeway and we had planned to have a small store of tetrapods should there be any specific or special storm damage to them. It was all-in cost average, as I tried to say. It was everything, even the repairs to the lighting and buildings like the administration building, and that sort of thing.

Mr. Langlois: From your earlier answer I can see that the cost of \$226 million over 60 years does not include the cost of the ferry to carry the railway traffic. That is outside of this altogether. Do you have figures on that?

Col. Churchill: A study was done in my shop which was based on input from other people, so we just accepted what they said. I think the costs were somewhere around \$2 million a year. I would not like to be held to that, but it was in that area.

Mr. Langlois: That is \$2 million for this year?

Col. Churchill: Per year, if you continued year by year.

Mr. Langlois: An average for 60 years?

Col. Churchill: That is right. This was not a very comprehensive study because it did not

take government deficit operations in that area into account, such as what would happen with trucks, or all the other things. This was a very simplistic look at what would happen if the ferry went on. I think we also did it for different times. We said to ourselves suppose the ferry, with the rail, stops in 1975. What happens if it goes to 1980, what happens if it goes to 1985, because in my opinion there will be some period when the thing will be overtaken by trucks.

• 2135

Mr. Langlois: Does your \$2 million a year figure include capital cost for new ferries, replacements, repairs, interest, and so on?

Col. Churchill: No.

Mr. Langlois: It does not. What does the \$2 million include, operating costs?

Col. Churchill: It just says that if you were to run that ferry for rail only, this is what it would cost the government, but in this study we had no intention of saying that you would have to replace it, because in fact the ferry could go for a very long time without replacement. We figured that it would disappear long before it ever had to be replaced.

Mr. Langlois: So you were not figuring on going 60 years with the railway on ferries.

Col. Churchill: I never thought that.

Mr. Langlois: Thank you, sir.

The Chairman: I have Mr. Harding and then Mr. Whicher on the first round.

Mr. Harding: Mr. Chairman, I just have one or two short questions and then I will let some of the other members wind this up.

Colonel Churchill, can you recall the estimate that you had for the two-mile causeway from the New Brunswick shore?

Col. Churchill: Are you referring to the estimate before I took over or the first estimate I gave the Minister?

Mr. Harding: No, I am thinking of the estimate. You told us you thought this could have been built for a total of \$191 million for two-lane traffic. What was the estimate for this two-mile causeway?

Col. Churchill: It is not two miles. So you mean the 3,500 foot one, the small one? It is a \$160 million causeway.

Mr. Harding: No, not for the whole causeway, just the first section of it.

Col. Churchill: The causeway portion of a \$160 million project?

Mr. Harding: Yes.

Col. Churchill: That was 3,512 feet, if I remember correctly on the New Brunswick side only. Is that not what I have given? That was around \$10 million to \$12 million.

Mr. Harding: We had some figures the other day to the effect that the lowest tender for the two-mile causeway from the New Brunswick shore was \$43 million. Do you think this is right or low, was it in line with the estimate of the entire project, or what?

Col. Churchill: I think it is high. I think things were included by contractors which need not have been included, and in later conversations with an advisory panel which we set up with the contractors for the heavy construction industry this became pretty apparent. There is quite a difference between a long one and a short one because the depth changes quite considerably. When you do this, you really have a different kind of game. For example, the end protection of the two-mile causeway is a very elaborate and very costly structure. When you come back to 3,500 feet it is just not a special kind of structure at all. In fact, it is one of the conventional piers, it is one of the piers of the bridge, but in the old design, when you are out two miles it was an extremely expensive end protection. What is more, in the change between the seasons before you finished it you also had to spend a lot of money on protecting the end at the point at which you finally arrived before you went on with the construction. It is not easy to equate them exactly.

Mr. Harding: Perhaps I should put my question in a different way. For a comparable distance and for the same thing that was called for in this tender, what would the estimate have been in the project that you...

Col. Churchill: I think you would have gotten a lower cost than \$43 million if you had done certain things.

• 2140

Mr. Harding: What was your estimate on it?

Col. Churchill: It was \$25 million. It was not mine, it was the estimate that was done

by the consultants. When they called the tenders that were eventually rejected it was \$25 million.

Mr. Harding: The estimate was \$25 million and the lowest bid they received was \$43 million.

Col. Churchill: Right, and I think that could have come down to the \$25 million if certain steps had been taken to reduce contingencies, and to share the risk with a contractor really to do something about insurance, which was really getting pretty horrible. Also, there was the business of being very clear about where the rock would come from. They were dashing all over the area looking for rock, and some of the rock that they came up with was not permissible in the Strait. The water would have just taken it away; it would not have lasted.

Mr. Harding: This sharp increase above the estimated amount, I imagine, would have been quite a shock.

Col. Churchill: I was not there.

Mr. Harding: Well, when you found out about it.

Col. Churchill: The shock was borne by my colleagues, not by me.

Mr. Harding: On a comparable basis, there is no doubt that we could have raised the—if similar contracts had gone...

Col. Churchill: In that way.

Mr. Harding: In that way.

Col. Churchill: I think the sharing of the risk with the contractor is a very real thing, because they would have had to put in contingencies. I am not sure whether I have made myself clear on this. Can I perhaps give you an example?

Mr. Harding: Yes.

Col. Churchill: When you are going to insure a job like this, a marine risk, you have to practically go to Lloyds. There is no other way around it. Lloyds have to take the lead. Then they will give you \$100,000 deductible. The contractor may say, I had better have five of these in case I have some disaster, so I had better put in \$500,000.

That does not mean that he is going to have it but the government pays for it because in his bid; it is locked into his bid. What we have tried to do latterly is to share the risk,

in a way, and say, well, of the \$100,000 deductible, let the contractor take \$25,000 or \$30,000 and let the government take the rest. There is sufficient there that the contractor wants to do the job properly without having to pay the \$25,000 or \$30,000, and then, multiplying it again by four or five, you only have to put up a \$100,000 in that bid instead of \$500,000. This is really the tenor of what I am trying to say.

Mr. Harding: Thank you, Colonel. I think this next question may have to go to Mr. Williams. It is in connection with the subsidies on the ferry. What is the estimated total subsidy on the ferry system, say, within six years? If the causeway had been built, I think the building time was six years. There is no doubt that the subsidy is going to go up as traffic increases. What was the total estimated cost of ferry subsidy, say, in five or six years' time?

Mr. Williams: I do not have a figure for that.

Mr. Harding: Could the Minister give it? Do you have that?

Mr. Williams: No.

Mr. Harding: The figure was available in information that Transport was studying, but I am sorry I do not...

Mr. Harding: It would be higher than the \$5 million to \$6 million?

Mr. Williams: I would think so.

Mr. Harding: Now there is just one more question, and I presume this could go either to the Minister or to Mr. Williams. What percentage of the total amount would be paid by the Province of Prince Edward Island and what percentage by the federal government, or was it all for the federal government?

Col. Churchill: All federal.

Mr. Harding: Thank you.

The Chairman: Mr. Whicher.

Mr. Whicher: Mr. Chairman, I feel a little bit out of my class here because I am surrounded by engineers and professional people who are very vitally interested in the Maritimes, and I only come from a little town in the Province of Ontario, Colonel.

However, I have found that even in that little town you have to pay interest on your

money, and how you can finance a project without taking any interest, most respectfully I say, is beyond me.

I am not going back to yesterday or the day before; I am taking your figures as they are today—\$191 million over a six-year period. To give you the benefit of the doubt I am going to make it in round figures. I am going to make it on \$30 million a year over six years. Is that fair enough? Today I think—and certainly the Minister will agree with me; all we have to do is look at the *Globe and Mail* tomorrow morning to see the interest rates on bonds—the cheapest that the Government of Canada can borrow money today is 7 per cent plus. We will just go with 7 per cent.

On \$30 million the first year 7 per cent is exactly \$2.1 million. Then the next year, you see, you do not just pay on \$30 million; you pay on \$60 million. The following year it is \$90 million and the following year \$120 million and the following year \$150 million, and then in the last year we pay 7 per cent on \$180 million. Mr. Chairman, most respectfully to the Colonel I say this: The total amount of that interest is exactly \$34.1 million before you put one car across that causeway.

Therefore, sir, I ask you: when you say that it costs \$191 million, do you not think it is fair to put in \$34.1 for interest? I do not know how you get this money unless you pay interest on it.

• 2145

Col. Churchill: I, too, am on the side of the angels and I agree with you that interest has to be added.

Mr. Whicher: Then you agree?

Col. Churchill: If you think we did not, then I am sorry, because I have left this Committee with the wrong impression. It was done on both sides. We did it with the ferry and we did it with the fixed crossing. In fact, it was on this basis that the economic feasibility was studied. There are two things; the economic feasibility and the financial feasibility. I was embroiled in the economic feasibility but, of course, not in the financial feasibility.

Mr. Whicher: But you were in this to the extent that you told us it was going to cost \$191 million. I say to you sir, with all due respect, it is going to cost, according to your

figures, \$225 million, and if you can show me any less, sir, I will buy you the biggest ice cream cone you can eat on the 15th of August.

Col. Churchill: First of all, I was trying to talk in 1968 dollars.

Mr. Whicher: I am talking in 1968 dollars, too,...

Col. Churchill: I was not trying to hide the fact that money costs money. The Stanford Research Report and all of the studies were done on an interest rate supplied to us by the Treasury Board, so we did do it. We went to the Treasury Board and said, what rates should we use? I think at that time we used $6\frac{3}{4}$ per cent. You said 7 per cent; we used $6\frac{3}{4}$ per cent or something like that. The computer runs were done on a $6\frac{3}{4}$ per cent; they were done on 7 per cent; they were done on $7\frac{1}{2}$ per cent; they were also done on $6\frac{1}{2}$ per cent and on 6 per cent.

Mr. Whicher: Yes, but you just said to the Committee that \$191 million did not include the interest on the money.

Col. Churchill: That is right.

Mr. Whicher: What the hell is the sense of using computers if you do not put the interest down?

Col. Churchill: Wait a minute. You are talking about the over-all economics of the proposition. I was not. I was telling them how many dollars of outlay they would have to entertain, including escalation. That is all I said. I did not say anything at all about whether it was right or wrong to use those figures in a discussion about economic feasibility. I said the outlay of the government was \$191 million.

That happens to be still true. That is the money that they would have to requisition to do this job. Of course they have interest carrying charges. I know that, and so do the other departments that are involved, and we did it on these interest rates; it is only after you do that that you can establish the true financial feasibility and this was done.

Mr. Whicher: Mr. Chairman, that is why I wanted to bring out the true financial feasibility. The cost is not \$191 million. There is compounded interest, you know. As a matter of fact, at the end of the first year it would not be 7 per cent on \$30 million; it would be 7 per cent on \$32.1 million and the second

year it would be 7 per cent on \$66.3. I did not take that into account. I suggest that it would be at least \$230 million without taking into account other than the interest.

Mr. Chairman, I respect Colonel Churchill; I have read all about his biography and the great success he has made in life, and so on, and what he did with Expo, but when we forget about interest in the total cost, then most respectfully I say that perhaps there could be another few million dollars that have been forgotten about somewhere along the line.

You see, I always read the figure on the right hand corner in the bottom sheet, whether it is red or black. If it is not black enough I do not buy into that company. That is why I am a little worried. Today money is very expensive and I do not think it is fair to the Maritime people, who have had their hopes built up for a long, long time, to say that this project is costing \$191 million. As I said, I will go a lot more than an ice cream cone; I will go anything you want that it is going to cost at least \$35 million in interest alone. I pass.

• 2150

The Chairman: Gentlemen, our time is up. I will allow both Mr. Macquarrie and Mr. Deakon, whose names were on the second round, one more question if the Committee is agreeable.

Mr. Deakon: I do not want to ask any more questions.

Some hon. Members: Agreed.

Mr. Macquarrie: Thank you, Mr. Chairman. I will be greedy enough to accept Mr. Deakon's time and add it to my own.

The Chairman: This is for one question, because it is now 9.50 p.m. and we have to pass this Committee report.

Mr. Macquarrie: Did we pass some ordinance that we must be through at 10 o'clock?

The Chairman: At 9.45 p.m.

Mr. Macquarrie: Oh, I did not know that.

The Chairman: I am trying to work everybody in and keep you all happy.

Mr. Macquarrie: Yes. I would like to say to the purveyor of ice cream cones that if this country had been built on the raw hard laws of economics, it never would have been built.

Mr. Whicher: It is awful tough though when you do not have the money and you have to put it up.

Mr. Macquarrie: Well, that is the position your part of the country was in when you invited us to join it.

Mr. Whicher: If you want to be sarcastic, I am a professional.

Mr. Macquarrie: No, I am sorry, I am being historic not sarcastic.

The Chairman: Order, please. On question and then we will wind it up.

Mr. Macquarrie: I would not try to match your interperation. I would like to ask the Colonel if he has made any computation of the cost to the Government of Canada, whose responsibility it is for interprovincial transportation and communication and not that of the province, over the next 25 years considering all the subsidies that must be paid to the ferries, the cost on a comparative basis between travel by solid crossing, the causeway, and travel by ferry which would obviously be an ever escalating number of ships.

Col. Churchill: I was on a committee which worked out the discounted cash flow on this basis, using the interest rates and all the rest of it, and I just want to say that that is why I say it is economically feasible. Do not ever kid yourself that I was talking economic feasibility, that seems to be inferred here about the \$191 million versus the \$742 million this will now be the third time that I have said this. The economic feasibility when I said that in my opinion it was economically feasible was not on those figures. So, yes, such a study was done and as far as I am

concerned when you project this thing over the natural amortization period that such a structure should have, it is economically feasible. As I said once before, I do not speak about financial feasibility, that is somebody else's business.

Mr. Macquarrie: On a point of order, Mr. Chairman. Might I add that the concept of tolls applies particularly and equally and intermittently to ferries where you have to pay to get across. So the idea of tolls for a causeway is nothing new, different or an innovation.

The Chairman: Thank you, gentlemen. I would like all of you to stay for a few minutes afterwards because we have to pass our report. I might say it is a very important one and we want your opinions on it before you leave.

Mr. Langlois: On a point of order, Mr. Chairman, we have to pass vote I.

The Chairman: I have not forgotten that, Mr. Langlois; I just want to make it clear to everyone what we are going to do afterwards before everyone starts shuffling.

Shall Vote I of the Department of Public Works carry?

Vote I agreed to.

The Chairman: Thank you, gentlemen. I want to thank Mr. Laing, his officials and Colonel Churchill for being with us this evening, and I want to thank the Committee members for the extremely good co-operation we have had in this Committee this session during the estimates. It has been a pleasure working with all of you. Thank you, gentlemen.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

ON

NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 27

TUESDAY, JUNE 17, 1969

Annual Report of the National Energy Board, 1968

WITNESSES:

(See Minutes of Proceedings)

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman:

and Messrs.

Barrett
Beaudoin
⁴Borrie
Code
Comeau
Cullen
Deakon
⁷Downey

Gilbert
⁵Gillespie
Harding
⁶Horner
Langlois
Lind
²Mahoney

¹Orange
⁸Schumacher
³St. Pierre
⁹Woolliams

(Quorum 11)

R. V. Virr
Clerk of the Committee

Pursuant to S.O. 65(4) (b)

¹ Replaced Mr. Roy (*Timmins*) on June 17, 1969.

² Replaced Mr. Hymmen on June 17, 1969.

³ Replaced Mr. Sulatycky on June 17, 1969.

⁴ Replaced Mr. Whicher on June 17, 1969.

⁵ Replaced Mr. Whiting on June 17, 1969.

⁶ Replaced Mr. MacDonald (*Egmont*) on June 17, 1969.

⁷ Replaced Mr. Macquarrie on June 17, 1969.

⁸ Replaced Mr. Forrestall on June 17, 1969.

⁹ Replaced Mr. McQuaid, on June 17, 1969.

ORDER OF REFERENCE

FRIDAY, June 13, 1969.

Ordered,—That the Annual Report of the National Energy Board for the year ended December 31, 1968, tabled on April 1, 1969, be referred to the Standing Committee on National Resources and Public Works.

ATTEST:

ALISTAIR FRASER

The Clerk of the House of Commons

[Text]

MINUTES OF PROCEEDINGS

TUESDAY, June 17, 1969.
(28)

The Standing Committee on National Resources and Public Works met this day at 8:13 p.m., the Chairman, Mr. Hopkins, presiding.

Members present: Messrs. Barrett, Beaudoin, Borrie, Cullen, Deakon, Gilbert, Gillespie, Harding, Hopkins, Langlois, Orange, Shumacher, St. Pierre, Woolliams.—(14)

Also present: Messrs. Chappell, Paproski, Sulatycky, Whiting, M.P.'s.

Witnesses: From the Canadian Petroleum Association: Mr. L. I. Brown, Chairman, Board of Governors; Mr. F. A. McKinnon, Past Chairman, Board of Governors; Vice-President & General Manager, Triad Oil Co. Ltd.; Mr. Gordon Connell, Chairman, Reserve Committee; Mr. J. Robert Steele, Past Chairman; Income Tax Committee; Assistant Tax Administrator, Texaco Exploration Co.

The Chairman called on Mr. Brown to introduce the officials of the Canadian Petroleum Association. Following this, slides showing the Canadian energy reserves and anticipated demands were shown.

It was agreed that members would be limited to an eight minute question period each. There being no further questions the meeting adjourned at 10:20 p.m. to the call of the Chair.

R. V. Virr,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Tuesday, June 17, 1969

• 2016

The Chairman: Gentlemen, I see a quorum. Could we come to order at this time? We have with us tonight officials of the Canadian Petroleum Association who wish to present information and a brief to the Committee. We want to welcome all of them here tonight to this meeting. We appreciate their visit.

I am going to call upon Mr. Brown, who is Chairman of the Board of Governors of the CPA and President of Chevron Standard Limited, to introduce the officials whom he has with him this evening. Then I will ask him to carry on with his officials after that with the pre-presentation of the film followed by the film itself. Mr. Brown.

Mr. L. I. Brown (Chairman, Board of Governors, Canadian Petroleum Association, and President, Chevron Standard Limited): Thank you, Mr. Chairman. I will introduce our people here in order: Mr. James MacNicol, Manager of our CPA office in Ottawa; Mr. F. A. McKinnon, Past Chairman of the Canadian Petroleum Association, and also Vice President and General Manager of Triad Oil Company Limited; Mr. A. M. McIntosh, who is a member of the Board of Governors of the Canadian Petroleum Association, and is Vice President of Pacific Petroleums Limited; Mr. D. S. Harvie, who is a member of the Board of Governors of the Canadian Petroleum Association, and is President of Canadian Fina Oil Limited; Mr. Gordon Connell, who is a co-ordinator of preparing economics for the Canadian Petroleum Association, and is a member of Gulf Oil Canada Limited; last, Mr. J. Robert Steele, who is a past Chairman of the CPA income Tax Committee; his position is Assistant Tax Administrator for Texaco Exploration Company.

I think you all know that we prepared this brief. We forwarded it to the federal Cabinet yesterday. I believe we have given you all copies. We thought that the best way to do this would be to give you a little background first on how we came to prepare this brief

and also a summary of what is in the brief. Then we can go on and try to answer any questions that you gentlemen may have. I would like to call on Mr. McKinnon to go into the first part of this, if I may. He will give you the background, introduction and summary.

Mr. F. A. McKinnon (Past Chairman, Board of Governors, Canadian Petroleum Association, and Vice President and General Manager, Triad Oil Co.): Thank you, very much. Mr. Chairman, we appreciate very much having this opportunity to appear before the Committee of National Resources and public Works. As Mr. Brown has said, members of our Association appeared yesterday before the Prime Minister and members of the Cabinet. For this purpose we had previously prepared and submitted a brief, copies of which I think each of you have.

• 2020

We might, I think, properly assume that not too many of you people are very well acquainted with the oil and gas industry. With this in mind, I will briefly give you some of the background of the industry and particularly the events that led to the meeting that we are having now. First, I should explain what the CPA is. Inside of the front cover of the brief is a short exposition on the makeup of the Canadian Petroleum Association which, as you will see, consists principally of members of the exploration and producing side of the oil and gas industry, representing about 97 per cent of the operators in Canada's oil and gas production.

The objectives of the Association as set out in that statement, I believe, explain as well as anything else why we are here. This is to establish better understanding between industry and the public, to encourage co-operation between the industry and government, to provide a forum for discussion of matters pertaining to the industry, and to foster better understanding between this Association and others.

About two years ago, during the period following the report of the Carter Commission on Taxation, we had many consultations with governments and, of course, as most of you know, our Association coupled with many others submitted a brief on that report. During that period it became quite clear to us that the understanding of our industry in government was not as great as we thought it should be or as great as we hoped we could make it.

In discussion of these problems with Mr. Pepin, who was the Minister concerned with our industries affairs, he suggested that we might do as many other associations and industries do; that is, prepare a report on the state of our industry in which we set out our progress, our growth, our status and some of our problems as a means of providing background information for discussion with government. In the course of events it has taken considerable time to get this done. However, our brief was prepared at the end of last year and finalized and submitted early in 1969.

The brief, entitled *Report to the Federal Cabinet* is in essence a review of the progress of industry to the end of 1968, although I might point out that most of the figures contained in the brief bring statistics up to the end of 1967. As some time has passed since the completion of the submission of this brief we have updated the figures to the end of 1968. In some copies of the brief which we can leave with you we have the 1968 year-end figures. It will be essentially those figures that we are dealing with tonight.

The report presents a brief insight into the scope and the complexity of this industry. It also deals with the impact this industry has had on the Canadian economy and I might point out although it does identify certain problems that we have had occasion to discuss with the government, our main purpose in here was not to come with problems in hand looking for immediate solutions, but rather to come on the broad base of our industry, its outlook and to try to be as informative as we possibly could for people in government.

Our industry has really been active in the full commercial sense since 1947 when the large discoveries were made in Alberta at Leduc and since that time with the development of the oil industry and the natural gas industry and related items, we have finally I believe at this point reached the capacity where we can present to the nation a fully

formed and somewhat mature industry that is having, and has had, a very dynamic effect on the Canadian economy as a whole. It was noticeable first in the West, but has since become pronounced throughout the country that it has contributed to a sound economic base for a major expansion of the nation's population, prosperity and productivity. It has made a major contribution to Canada's

● 2025

trade balance through increased exports and reduced imports and in these ways has materially strengthened the economic unity of the nation.

At the end of 1968 on the oil side, we could report liquid reserves; that is, oil and related liquids of 10 billion barrels producing in 1968, 433 million barrels. As far as gas reserves are concerned, they stood at the end of 1968, at 48 trillion cubic feet with production during 1968 at 1,395 billion cubic feet.

Now, I have already mentioned that the main purpose and concern of the Association at this time is to promote the development of programs and policies which will provide the incentives necessary to maintain a strong, active and vigorous exploration program throughout the country. This is necessary as we will demonstrate and discuss so that in the face of vastly growing hydrocarbon energy requirements in Canada and the United States in a short time the Canadian petroleum industry will need to be in the best possible position to supply these energy requirements.

By way of emphasizing this point we would estimate that a total of 7.8 billion barrels of Canadian liquid hydrocarbons will be required in Canada. In addition to the 10 billion barrels in current reserves an additional 13.1 billion barrels must be found to supply the Canadian market up to 1980 and still have, say, 15 years supply on hand. This is on the oil side, on the Canadian picture.

On the oil side with respect to the United States the pattern further emphasizes the importance of Canada's future role. In the 10-year period to 1980 the U.S. demand will total 63 billion barrels with present U.S. reserves at 39.3 with a life index; that is at present rates of production these current reserves will last 10.3 years. To satisfy the U.S. requirements and retain a 10.3 life index in 1980, will require additional reserves of 96 billion barrels. We know that as far as the U.S. is concerned a substantial portion of

their future requirements will have to be imported and we feel it is logical to expect that the Canadian industry should provide a good portion of the U.S. future supply.

I have mentioned those by way of example on the oil side of our industry. Similar figures demonstrate a great and growing almost critical need for reserves of natural gas to satisfy the requirements of the immediate future.

I might point out that all of this would appear to present for us a very rosy picture for the future because there are tremendous parts of our country that have not yet been thoroughly explored. We see every evidence of a tremendous need in the future for everything that we can find. This is so, but this is not an easy job and it takes tremendous capital requirements to continue this exploration program and it cannot best be done unless it is developed in an atmosphere and environment that gives incentive to the people involved to continue exploratory work at a very high level. This is really the nature of our concern.

Some of the recent things that have happened, the discovery of tremendous reserves, size as yet unknown, in northern Alaska will certainly form a part of the future pattern of marketing within the United States; the problems of marketing our Canadian crude that we presently have available within the United States; the questions concerning the possibility of the entry of Western Canadian crude into Montreal—all of these, we say, require very thoughtful consideration and much understanding.

● 2030

At this point, I would like to suggest that Mr. Connell might show you some slides we have prepared that show, essentially, the current status of discoveries in oil and gas areas of Canada and we conceive to be the potential future reserves in these areas. Gordon, would like to do that now?

The Chairman: Gentlemen, those members who are sitting on that side of the table will have to move over here for the presentation of the slides because we are going to use the wall immediately behind them.

Mr. Gordon Connell (Chairman, Reserve Committee, Canadian Petroleum Association): Gentlemen, as Mr. McKinnon has indicated, we will first look at this map which illustrates the potential hydrocarbon areas in Canada. You will note the number of figures on the

viewgraph. For example, in Alberta it indicates that to date, to the end of 1968, there have been 10.8 or practically 11 billion barrels of oil discovered and 47.6 trillion cubic feet of gas. This is out of an estimated potential of ultimately recoverable reserves of 18 billion barrels of oil and 90 trillion cubic feet of gas. The other figures indicate the acreage held under lease, permit or reservation of 89.2 million acres with a prospective acreage of 157 million acres.

I will not go through all the figures. We might just cover the Canadian sedimentary basin, which includes Manitoba, Saskatchewan, Alberta, British Columbia, the Northwest Territories, and the Yukon. Here to date has been discovered some 13 billion barrels of crude oil and 58.3 trillion cubic feet of gas. This includes 60 million barrels of oil in the Northwest Territories at Norman Wells. In addition there have been 300 billion cubic feet of gas discovered. On the ultimate recoverable reserves for this basin, it is estimated that approximately 50 billion barrels and 240 trillion cubic feet of gas will eventually be recoverable.

I am sure you are interested in the acreage and the potential of the areas in which the federal government has an interest, so we will review those. I have referred to the oil discovered in the Yukon and in the Northwest Territories. It is estimated that the ultimate recoverable reserves in this area are 17 billion barrels and 83 trillion cubic feet of gas.

● 2035

In the Arctic islands it is estimated that ultimately 43 billion barrels of crude oil and 260 trillion cubic feet of gas will be recovered. It is a question whether gas from that area would be marketable. About half of that 43 billion barrels is estimated to be onshore and the other half offshore.

On the West Coast the ultimate recoverable reserves are estimated at 8 billion barrels of crude oil and 40 trillion cubic feet of gas. Moving over to the Hudson Bay area, the ultimate recoverable reserves of crude oil are 3 billion barrels and there are 17 trillion cubic feet of gas.

On the East Coast, which is considered one of the best potential areas, there are 25 billion barrels of crude oil and 150 trillion cubic feet of gas. This gives a total of 96 billion barrels of crude oil and 552 trillion cubic feet of gas potential on acreage held by the federal government. This represents approximately 75 per cent of the total potential of crude oil and natural gas in Canada.

At the upper right-hand corner of the map there is a summary of the total reserves. In looking at oil, there has been nothing discovered offshore yet but there are 36 billion barrels estimated to be recoverable. There has been no gas discovered offshore yet, but the ultimate recoverable reserves are estimated at 207 trillion cubic feet. Acreage held under lease, permit or reservation amounts to 328 billion barrels, with a potential acreage of 479 million acres. Onshore, looking at oil, there have been 13 billion barrels discovered to date with 49.2 ultimate recoverable reserves. Gas discovered to date is 58.3 trillion cubic feet and it is estimated that 240 trillion are ultimately recoverable.

We have already covered the Arctic islands figures, and looking at the total discovered to date, 13 billion barrels, the ultimately recoverable amount is 128 billion barrels. On gas, discovered to date, 58.3 trillion cubic feet out of 707 trillion cubic feet, and the committed acreage, 804 million acres, has a potential of 1,268 million acres.

You will also note the figure at the bottom of the estimated recoverable reserves for the Athabaska tar sands of 300 billion barrels. In addition, in that general area, there is some non-conventional heavy crude oil which is just southeast of the Athabaska tar sands, and that is estimated to have a potential in the order of 75 billion barrels.

Looking at the demands for Canadian liquids, hydrocarbon, this viewgraph depicts the growth and demand for Canadian hydrocarbons as shown by the solid blue section in the lower portion of the graph. The domestic demand for liquid hydrocarbons has grown from 21,000 barrels per day in 1947 to 700,000 barrels per day in 1968, and by 1985 it is expected to increase to 1,300,000 barrels per day.

Practically all of Canada's exports of liquid hydrocarbons are to the United States. The first significant exports occurred in 1955 when 46,000 barrels per day were exported. These exports increased to almost 500,000 barrels per day last year.

You will note on that viewgraph that we have shown two projections for exports. Case 1 assumes that if the gap between the indigenous supply and the demand in the U.S. widens, overseas imports will, in the interests of national security, not be allowed to rise above a specific percentage of the total domestic demand. This is about 16 per cent of domestic demand and the resulting deficit in

supply will therefore be imported overland from Canada. This would result in exports increasing to 2.1 million barrels per day by 1975, to 2.2 million barrels per day by 1980, and to 3.1 million barrels per day by 1985. Combining that domestic and export demand, by 1975 we would be producing 2.1 million barrels per day, 3.3 million in 1980, and 4.3 million in 1985.

Next we can look at the second case, and this assumes that geo-political considerations result in the United States arranging for the increasing supply deficiency to be shared between overland imports from Canada and overseas imports. Using this assumption, it is estimated that exports will increase to 800,000 barrels per day in 1975, 1 million barrels per day in 1980 and 1½ million barrels per day in 1985. The total demand resulting from this

• 2040

estimate works out to 1.7 million barrels per day in 1975, 2.1 million barrels per day in 1980 and 2½ million barrels per day in 1985. The difference between Cases 1 and 2 amounts to 1¼ million barrels per day in 1980, and this vividly demonstrates the necessity for both the Canadian Government and industry to work diligently to convince the United States of the advantage of overland imports from Canada to that country.

Referring next to the demand for Canadian natural gas. This shows the actual and forecast growth of the demand for Canadian natural gas. The domestic demand increased from 110 million cubic feet per day in 1947 to 2.3 billion cubic feet per day in 1968, and it is projected that it will increase to 5.7 billion cubic feet per day by 1985. The first significant exports commenced in 1958 when 247 million cubic feet per day were exported to the United States. These increased to 1.7 billion cubic feet per day last year and by 1985 are forecast to amount to 3.4 billion cubic feet per day. After allowing for imports of approximately 200 million cubic feet per day, the total demand for Canadian gas last year was 3.7 billion cubic feet per day and by 1985 we expect this to increase to 9 billion cubic feet per day. As a result of a rapidly increasing gap between the demand for and supply of natural gas in the United States, the opportunity will be enhanced for even greater exports to that country if adequate reserves are developed in Canada.

We will next look at the United States supply-demand picture. As shown on this view-

graph, the United States demand for liquid hydrocarbons is projected to increase from 13.3 million barrels per day last year to 15.7 million barrels per day by 1975, to 17.8 million barrels per day by 1980 and 19.8 million barrels per day by 1985. These estimates were made almost two years ago. A number of more recent estimates indicate that this projection is low and that the demand in 1980 will actually be in the order of 18½ to 19 million barrels per day, as compared to the 17.8 million barrels per day shown on this viewgraph.

Looking at the United States supply, this is excluding the Alaskan North Slope, where Prudhoe Bay is located, and there is very little information available at the present

• 2045

time. The supply amounted to 10.4 million barrels per day last year and it is expected to increase to 12 million barrels per day in 1975, 12½ million in 1980 and 13 million in 1985. Here again these estimates were made some time ago. Recent production performance in the United States indicates that these estimates are overly optimistic. Present indications are that in 1980 the supply will be about 11½ million barrels per day, or 1 million barrels per day less than shown on this chart.

The deficiency between supply and demand, as shown by the upper portion of the viewgraph, increases from 2.9 million barrels per day last year to 3.7 million barrels per day in 1975, 5.3 million barrels per day in 1980 and 6.8 million barrels per day in 1985. However, using the more recent estimates, in 1975 this deficiency amounts to 5 million barrels per day and in 1980 to 8 million barrels per day. These deficiencies will be supplied by production from the Alaskan North Slope, overland imports from Canada and imports from overseas. The magnitude of this deficiency again illustrates the tremendous opportunity for increasing the exports from Canada.

We will next look at the disposition of Canadian liquid hydrocarbons for last year, 1968. You will note on the viewgraph that five districts are shown in the United States. District V comprises the area west of the Rocky Mountains in the United States. Last year exports from Canada to this area amounted to 176,000 barrels per day and are currently about 220,000 barrels per day. Crude oil from the Prudhoe Bay area on the North Slope of

Alaska is expected to enter this market in 1972 and this will result in a substantial decrease in demand for Canadian crude oil in the Puget Sound area. However, we expect the demand to stay at about 100,000 to 125,000 barrels per day at the time the Prudhoe Bay production enters the Puget Sound area.

The Canadian industry is looking forward to obtaining substantial increases in demand from Districts I, II and IV, commencing in the early 1970s and growing rapidly thereafter. That is all I have. Thank you.

Mr. Brown: That completes the presentation of our brief. We would be glad to try to answer any questions that any of you gentlemen may have.

The Chairman: Thank you, Mr. Brown. We will start off by first recognizing Mr. Deakon.

Mr. Deakon: Thank you, Mr. Chairman. The witness referred to the necessity for the increase in the demand for hydrocarbons. In their computations did they take into consideration the increased utilization of other forms of energy and also the possibility of the future development of friction-free mechanical devices?

Mr. Connell: We have certainly reflected the use of other forms of energy, such as nuclear, electricity, wood, coal, and so on. We have a viewgraph to illustrate that, if you are interested in seeing it.

• 2050

Mr. Deakon: I would like to see it, yes.

The Chairman: Gentlemen, while this is being arranged, if I may interrupt, I have several names on my list at the present time and if I can get agreement from the Committee I would like to limit each speaker to eight minutes on the first round so that everybody who wants a chance will have one, and then we will start our second round after that. Is that agreeable to the Committee?

Some hon. Members: Agreed.

Mr. Connell: This is a projection of the total energy requirements in Canada. They amounted to some 4.7 quadrillion, or 4,700 trillion BTUs, in 1967 and are expected to increase to 9,200 trillion BTUs by 1985.

You will note in the lower section, which is coloured green, that in oil they have allowed the oil share to decrease slightly, from 54 per cent of the total energy requirements to 52 per cent. The second section, which is in red,

is natural gas and that is projected to increase from 20 per cent of the total market for energy to 24 per cent. Coal and wood is expected to decline from 16 per cent to 10 per cent. Hydroelectric declines slightly from 10 per cent to 8 per cent. The upper section is nuclear, which is practically nil at the present time. There is a small amount being used, but it will increase to 6 per cent of the total energy by 1985.

Mr. Deakon: Thank you. In other words, it would appear that in the future, or at least until 1985, the main source of energy requirements will be that of oil.

Mr. Connell: From an energy standpoint, yes. You will note that is probably a little over half of the total.

Mr. Deakon: If I may continue, Mr. Chairman, and I will not take up too much time. I noticed in one of the graphs you had here that the potential on the West Coast, the East Coast, the Arctic Islands and the Hudson's Bay area was quite great, but as yet it has not been developed. I understand you gentlemen have had an opportunity to talk to the Cabinet. What if anything did you obtain from the Cabinet with regard to the development of these areas?

Mr. McKinnon: We obtained nothing from the Cabinet because our discussions were not along those lines. I am not quite sure what you are getting at. As far as industry is concerned, the acreage being occupied and the programs that are underway, it is active in all of those areas at the present time.

Mr. Deakon: Yes, but in the majority of them you show no discoveries. I notice, for example, that you have no discoveries in Hudson's Bay and no discoveries in the Arctic Islands.

Mr. McKinnon: The activity in those areas has begun very recently. The potential of the area is determined by the calculation of the total volume of sediments in those areas as best we can do so with the meagre information at hand and relating it to similar sedimentary basins elsewhere.

Mr. Deakon: What incentives, if any, has the government proposed in order to develop these areas of potential hydrocarbons?

Mr. Brown: I do not think there are any particular incentives other than letting the industry have the acreage and letting them develop it.

Mr. A. M. McIntosh (Member, Board of Governors, Canadian Petroleum Association):

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I might add to that. There are no incentives. Let me first of all make it clear that the CPA delegation did not come to Ottawa to ask for anything. We did not have anything to ask for or any axe to grind at all. The incentive that we are seeking, if you will, in our own way—not by asking for any special dispensation—is access to market. If we have the market we will go ahead with the development. The reason the exploration program has taken the pattern that it has is that it is far more economical to develop and explore the plains area of Alberta as a start. These other areas are vastly more expensive to work in and the capital demand is going to increase at an extremely fast pace.

Mr. Deakon: I understand this, Mr. Chairman, but I am concerned about the fact that you show the projection of a very, very highly increased demand for these products in the not too distant future, and as a result I am very much concerned. This is one of the questions I wish to ask on this matter. The next question is whether you are going to be competitive enough with the Venezuelan and Middle East markets.

Mr. McIntosh: Let me explain that the CPA is not a marketing organization. We are ad libbing to the extent that we have discussed markets, but the markets for Canadian oil are in North America; they must be. At this point in time you cannot compete in overseas markets with overseas oil.

Mr. Deakon: You cannot compete with overseas markets. Is that right?

Mr. McIntosh: We cannot compete in overseas markets, if that was your question.

Mr. Deakon: I see. I am referring to the Canadian markets. For example, can you compete with Venezuelan oil coming into Montreal to supply Ontario and the eastern seaboard?

Mr. McIntosh: We can compete in Ontario but not in Montreal at the present moment.

Mr. Connell: Not under the present price structure.

Mr. Deakon: I have heard some rumblings about the fact that because of the restrictive measures of the government in preventing oil from going into the United States that certain

United States markets in the north central United States have been required to look to Venezuelan and Middle East oil to supply the demand.

Mr. McIntosh: These are American restrictive measures, they are not Canadian.

Mr. Connell: These restrictions were placed on the Canadian industry in this agreement and this agreement, of course, was signed in order to obtain the right to route the Lake-head pipe line, which is a portion of the Interprovincial pipe line, through Chicago. It was necessary to loop that line and if they followed the present route, which goes through Lake Superior, Wisconsin and the Mackinac Straits, the large refinery area in Chicago would not have been opened up to Canadian crude oil. This is a concession that the Canadian government agreed to in order to have this market available sometime in the future. This agreement covers an increase of 26,000 barrels per day until 1971. It is 306,000 barrels per day this year in Districts 1 to 4.

We do not get into District 3 at all. We just cannot compete in that area. However, you will notice that last year 31,000 barrels per day went into District 4, 224,000 barrels per day went into District 2 and 56,000 barrels per day went into District 1. The restriction is placed on Districts 1, 2 and 4.

Mr. Deakon: The point I am bringing up is that I understand the Ashland Oil Co. is

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requesting permission to import more oil into their Buffalo and other refineries. Is this the limit of your district there that you say the U.S. has put restrictions on?

Mr. Connell: This year the U.S. has put restrictions on that general area of 306,000 barrels a day of Canadian crude oil and this will increase by 26,000 barrels per day per year until 1971. A number of other companies are in the same position, they have been restricted. They want more oil.

Mr. Deakon: That is right.

Mr. Connell: Our oil is competitive. In the general Chicago area it would probably be on the order of 50 cents per barrel less than the United States domestic oil would be in the same area.

The Chairman: Mr. Deakon, your time is up.

Mr. Deakon: I have not had a chance to say anything yet. May I just finish this off, Mr. Chairman? I just want to make this point. I just heard the statement made that these restrictions are put on by the United States. I agree with certain restrictions, especially in the western portion of Canada, that is true, but in Buffalo and the area surrounding that district certain restrictions have been placed. I do not know by whom, but apparently certain companies are requesting permission to get more oil in but the Canadian government will not allow it.

Mr. Connell: This is because of the agreement that they have made with the United States and this was necessary in order to get permission to route that line through Chicago, and of course this is looking to the future.

Mr. McIntosh: To state it another way, the restriction had been placed on it by the Canadian government in order to live up to an agreement called for by the Americans. Again, the restriction is the American restriction.

Mr. Deakon: Thank you.

Mr. Schumacher: Mr. Chairman, I wonder if I could get some information about the pricing of oil. I would like to know how the well-head price of oil is determined. Is it determined by the producers themselves, or does any level of government enter into it?

Mr. Connell: Originally the price of crude oil in Canada was based on a laid-down price of Mid Continent crude in Sarnia, and that was the competitive point. Then to obtain the well-head price, you deduct the transportation charges from the well-head to Sarnia.

With the opening of the St. Lawrence Seaway, Canadian crude oil came into competition with world crude oil. This could move through the St. Lawrence Seaway from any place overseas, such as Venezuela, the Middle East, and so on. Currently our crude oil price is higher, say into the Toronto area, than it would be if Middle East crude was moved in.

They have a very low price for that crude oil, and they are able to operate at this price because it may cost them only 5 or 10 cents a barrel for mining it, whereas Canadian crude costs several times that amount.

Mr. Schumacher: How much higher is Canadian crude at Toronto than Middle East would be if it was delivered there? I think it

would be helpful if you could convert it into cents per gallon of gasoline to the consumer in Toronto.

Mr. Connell: Actually we have heard figures quoted that the price of crude oil in Montreal is in the order of \$2.57 per barrel. The laid-down price in Toronto is a little over \$3.00 per barrel. It will vary considerably depending on the type of crude, the gravity,

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and the sulphur content. In Edmonton the price for 42 degrees API oil is \$2.90 per barrel. This is reduced three cents per degree API. Therefore Redwater crude, for example which has a 34 degree API, runs at \$2.66 per barrel. The transportation charge from Edmonton to say Clarkson, or to the Toronto area, is 53 cents a barrel. Therefore that would be \$3.19 for that comparable type of crude.

Mr. Brown: We might mention again that we are engaged principally in producing and exploring for our organization, and I do not know if we can quote these gasoline prices or not. We do not represent markets.

Mr. Schumacher: I thought you might have that information.

I wonder if any studies have been done about the cost of shipping Canadian oil for refining purposes from the Toronto area to Montreal by pipeline. How much does that add to the cost?

Mr. Connell: Actually a rule-of-thumb figure is about three cents per 100 barrel mile. Therefore, an additional 300 miles would be 9 cents a barrel in a large-diameter pipeline. However, if there was a larger volume going through an interprovincial pipeline, we would expect some reductions in tariff.

I might say that the association has not made any studies. This is only a rule of thumb I have myself.

Mr. Schumacher: Does the association have any knowledge about any breaches of the national oil policy concerning the transfer of foreign or Venezuelan petroleum into the Ontario area?

Mr. Connell: Certainly we are aware from reports in the papers and through other sources that there have been products moved from the Montreal area to west of the Ottawa Valley.

Mr. Schumacher: What petroleum products are covered by the national oil policy?

Mr. Connell: Practically everything, with the exception of residual, or what is commonly known as bunker fuel. This was exempted. It is a residual product, practically a by-product, and in order to improve the economics of refineries which are actually very poor in Ontario in particular, it is necessary to up-grade the crude oil into the most valuable products.

Mr. Schumacher: Is bunker fuel used for industrial purposes?

Mr. Connell: Yes. It is a heating fuel. There is what they call a number 6, which is the heaviest of the bunker fuels. Then there are smaller amounts of number 4 and number 5, which are slightly lighter products.

Mr. Schumacher: Does this type of fuel make up a significant proportion of the total B.T.U. energy requirements that are supplied by oil?

Mr. Connell: It is not a large portion of it. No.

Mr. Schumacher: Thank you.

Mr. Gilbert: Mr. Chairman, I think it was Mr. McKinnon who directed our attention to the fly leaf of the report, indicating that there are 200 members in the association. I wonder if you could give me the breakdown of the number of Canadian oil companies and the number of American and other foreign companies?

Mr. McKinnon: I am sorry I am not able to do that. The 200 or so members of the association represent a very broad range from extremely small to extremely large companies and certainly among those there are, some 8 or 10 that are referred to as the integrated companies, or the majors. These are, by and large, Canadian arms of foreign-owned firms. But as to numbers, I am afraid I could not be specific about it.

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Mr. Gilbert: Well, let us get down to percentages of production. What percentage of production would the American-owned companies control or produce?

Mr. McKinnon: We are now getting into something that requires a good deal more definition. Perhaps you could clarify what you are referring to as a foreign company,

because many of these are Canadian incorporated companies. They may have foreign affiliations, but we have no real interest in knowing what their foreign connections may be.

Mr. Gilbert: Well, surely there are subsidiaries of American-owned or other foreign-owned companies, Mr. McKinnon. I thought you would have particulars with regard to the number of American-owned subsidiaries operating in Canada and also the number of other foreign-owned subsidiaries.

Mr. McKinnon: I do not believe we have the information, and we in the association have not been particularly interested.

Mr. Gilbert: I notice that the name of your association is Canadian Petroleum Association. I am wondering if that is the right name for it, and if you...

Mr. McKinnon: This is an association of individuals and companies operating in the petroleum industry in Canada, under Canadian rules.

Mr. Gilbert: What tax advantages do these companies have operating in Canada?

Mr. J. Robert Steele (Past Chairman; Income Tax Committee; Assistant Tax Administrator, Texaco Exploration Co.): Do you mean the American companies versus the Canadian companies?

Mr. Gilbert: It seems we all have the same tax rules by which to operate. What tax advantages are there relative to tax holidays and tax incentives, and so on?

Mr. Steele: That is a very complicated subject. It goes through the whole of the tax provisions.

Mr. Gilbert: You are probably a very able person, and could do it in a few minutes.

Mr. Steele: No, I do not think I can do it in a few minutes.

Mr. Gilbert: What are the tax advantages in relation to tax holidays? What is the rule about that?

Mr. Steele: We do not have tax holidays, as such. In our brief on page 13 we have given a brief description of what the tax provisions are. Basically, the drilling and exploration expenses are deductible immediately to the extent of income, and the drilling and exploration expenses in excess of income can

be carried forward and deducted from the income of future years; and there is provision for the depletion allowance of 33 $\frac{1}{3}$ per cent of the net production profit which remain after deducting all these drilling and exploration expenses, if there is any income left after deducting those. That is basically the general provision of the Income Tax Act.

Mr. Gilbert: What is the total amount of tax advantage that you receive each year? I heard a figure of \$150 million quoted by one of the deputy ministers in relation to the oil and mining industry. What would be the percentage to the oil industry?

Mr. Steele: Offhand I do not know the percentage to the oil industry. These figures come from the Department of National Revenue statistics that are published, and they combine oil and mining.

Mr. Gilbert: You have no idea of the number of millions that your industry is given in tax advantages in any year?

Mr. Steele: The tax saving, if you like, from the deduction of these costs is appearing on the returns of the individual companies. None of us knows how much the other companies are claiming on these things. These are confidential statistics that are in the returns. The Department of National Revenue can give totals, but their statistics combine oil and mining.

Mr. Gilbert: Would it be fair to say that of the millions that are given by way of tax advantage the majority of them go to the U.S.-controlled firms?

Mr. Steele: I do not know because I do not know what the breakdown is. But the firms that have United States interests, of course, are the large firms. I would assume a large amount would go there. Again, we do not know the breakdowns of individual companies.

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Mr. Gilbert: Are these United States subsidiaries subject to The Trading with the Enemy Act?

Mr. Steele: That is beyond me. It is not an income tax question.

Mr. Gilbert: Perhaps Mr. MacKinnon can tell us.

Mr. Steele: Yes.

Mr. McKinnon: This is a United States act, is it not?

Mr. Gilbert: That is right.

Mr. McKinnon: Yes.

Mr. Brown: I think the United States companies are aware of that and just make provision so that they do not deal with the enemy. That is what I understand.

Mr. Gilbert: What I am saying is that probably the United States subsidiaries are subject to direction and possible control by the American parent as a result of The Trading with the Enemy Act.

Mr. Brown: I know that some of the American companies are aware of that Act and are very careful to watch out for it.

Mr. Gilbert: This really means that most of our oil production goes to the United States market?

Mr. Brown: If I might answer that, I think the reason that the oil goes to the United States market is that it is an economic market. I do not know the enemies of which you speak, but surely they are overseas; and we have already stated that there is no way we can be competitive in an overseas market. So I do not think that...

Mr. Gilbert: You do not think it follows?

Mr. Brown: No.

Mr. Gilbert: That is all I have.

Mr. Steele: May I add a point on the question you asked about the breakdown of the allowances? I have here a photocopy of a question in *Hansard* on April 30 at page 8161, Mr. Harding had asked the question.

1. What is the total amount of depletion allowances claimed by (a) oil and natural gas companies (b) all other mining companies in each of the years 1960 to 1968?

The answer given by the Minister of National Revenue was in relation to oil and gas companies from 1960 through 1966. The figures for 1967 and 1968 were not available: in 1960, 20.7 million; in 1961, 14.8; in 1962, 25.2; in 1963, 40.2; in 1964, 40.7; in 1965, 61.0; and in 1966, 68.00.

These were the depletion allowances claimed. That would not be the tax saving but the depletion allowance claimed as a deduction in computing taxable income. The mining is given separately. So he did give it an answer to this question.

Mr. Gilbert: How many members of your Association participate in this Pan Arctic consortium in the development of the Arctic.

Mr. McKinnon: Roughly, about a dozen.

Mr. Gilbert: Of that dozen how many are Canadian-owned?

Mr. McKinnon: I think that most of them are, with one exception.

The Chairman: Have you finished, Mr. Gilbert?

Mr. Gilbert: I do not know that we had an answer, Mr. Chairman.

The Chairman: We had his answer.

Mr. McKinnon: There are some companies involved, and I believe one is not Canadian-controlled.

Mr. Gilbert: Thank you, Mr. Chairman.

The Chairman: Mr. Chappell?

Mr. Chappell: Mr. Chairman, is it within the rules for me to ask through you a question of another member of the Committee?

The Chairman: No; if this person is not a witness he does not have to answer.

Mr. Chappell: I am sure he would be pleased to answer.

The Chairman: We will put our questions to the witnesses before us.

Mr. Chappell: Thank you.

An hon. Member: Ask it! Be out of order!

Mr. Chappell: I shall ask it and take my

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chance on its being ruled out. I am not clear on Mr. Gilbert's questions about trading with the enemy. I cannot see how that would be relevant to, or would affect, the export of Canadian oil to the United States for their domestic consumption.

The Chairman: Would you care to clarify that point, then?

Mr. Gilbert: Mr. Chairman, I received an answer from one of these gentlemen up here that our competitive position with regard to other countries is not strong; therefore the Trading with the Enemy Act may not apply. But you know, Mr. Chairman, although we may not be competitive with other countries

now, there is always the future, and I was just eliciting from these gentlemen the effect of the Trading with the Enemy Act.

Mr. Chappell: I would like to ask—and I am not trying to be facetious—I take it you gentlemen are concerned mainly with sales of these products of the future years so that you can lay your plans for production.

Mr. McKinnon: This is so, yes.

Mr. Chappell: Generally, as authorities on the subject, what do you think our long-range plans should be for the future? What areas should we be developing and what should be done to develop so that we can produce in the most economical areas first and develop the areas through roads and pipelines? I would be most interested to hear what you think the government's plans should be for the production of all these natural products.

Mr. McKinnon: If I might start from the industry side in pointing out that...

Mr. Chappell: May I interrupt for a second. I take it you do have long-range planning through your organization, your Association.

Mr. McKinnon: I believe the planning that you are referring to is mainly planning of an individual company for its own activities, not through the Association.

Mr. Chappell: No, the very opposite—through the Association. If we have spot development all over the place, we cannot lay in the services very well. But generally, what areas should come first? Where should we give priority for development?

Mr. McKinnon: I think the matter of priority in development again is one that is determined by the elements within an individual operator. There is not in this Association any suggestion of controlling or determining the order or priorities of any kind of programming. The Association is merely for the purpose of discussion or for the purpose of these companies coming together to discuss over-all aspects of the industry that require attention, either for the Association itself or for other similar organizations or, as is often the case, in relationships with government, which can be government at any level. Much of the work of the Association has been in its relationship with local governments or provincial governments as well as in certain matters that we need to discuss with the federal authority. But there is not within the structure of our industry any pattern outside of the

planning of each individual company to determine which areas. This is, after all, a highly competitive industry. We depend very much on ideas for exploration that are generated within the company organization, and that information is very secret and confidential and is not shared with other operators.

Mr. Chappell: I understand that point completely; yet some industries which are highly competitive individually get together for certain things where there is a common goal.

Mr. McKinnon: A common goal or a need to share very high cost expenditures, very expensive operations, and things of that nature.

Mr. Chappell: Right. If you were to get a blank cheque from us now, what would the oil industry as agreed amongst you like?

Mr. McKinnon: There may be some other of our people who would like to try to answer this. But basically I think we have to remember that the expenditures that we must make in this kind of program have to be out of our

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cash flow, so that we need to be able to sell our production in markets that will bring us a return on the investment and provide the funds necessary to continue the exploration.

Mr. Chappell: Right. So your main concern...

Mr. McKinnon: ...is selling what we find and cannot produce.

Mr. Chappell: But the federal government encourages the sales as you are able to produce.

Mr. McKinnon: Yes.

Mr. Chappell: All right. Are you concerned about the transportation of your product to the United States border or is that reasonably under control for the next few years?

Mr. McKinnon: In the history of our industry we have been able to supply the facilities to transport anything that we find that is within economic reach of the market.

Mr. Chappell: Do you ever see any evidence that we will not be able to sell your product as you produce it, that is subject that you do not produce it all one year and have a boom and then a bust but that you produce at a reasonable rate?

Mr. McKinnon: I would say that in certain aspects, the build-up of markets for the production that we are capable of producing has not advanced as fast as we would like to have seen it.

Mr. Chappell: You would like to see the sales a little faster?

Mr. McKinnon: Yes.

Mr. Chappell: Everybody has heard that Alberta is going great guns and that Saskatchewan is coming along. Is there much going on in Manitoba yet?

Mr. McKinnon: The activity in Manitoba is relatively small, but this is because the areas in Manitoba are comparatively limited that are prospective for oil and gas. There is a very small portion of the province that is within a sedimentary basin.

Mr. Chappell: Well, I see on the map that there seems to be quite a large area in Manitoba that is...

Mr. McKinnon: Comparatively speaking, it is small, with much thinner sedimentary column and over-all less prospectiveness for oil and gas discovery.

Mr. Chappell: All right. You have been very frank that your main concern is to allow industry to carry on by itself and that we produce the market for you. Does your planning in the individual companies extend beyond just the production of oil but reach into the production of new towns, subsidiary industries around where you do refining and that sort of thing and therefore other industry and housing? Do any of your companies go into that type of planning, or is it just to get that gas or oil under the ground and down the pipeline?

Mr. McKinnon: I think I can assure you that many of our companies have been very deeply involved in the development of new towns and in the development of community and social facilities in the areas where the developments have taken place.

Mr. Chappell: But as far as the oil industry is concerned, the regional developments you have left completely to the government responsible. You have not made any suggestions or representations.

Mr. McKinnon: I am not sure I am getting right to your point, but maybe we can come at it from another direction. As a result of oil industry activity in many areas, we have seen

the development of ancillary industries—the discovery of other minerals such as potash in Saskatchewan is a good example—we have seen the development of the sulphur industry in which we are extracting tremendous quantities of sulphur from natural gas, and all of these have an industrial and social impact in those areas. I do not see that very much of that kind of development has been left to government to generate. I think that that activity and that development has been generated either by oil companies or by other industries that have grown up side by side such as, for example, the fertilizer industry and the potash industry.

Mr. Chappell: This is my last question. I am not trying to imply that you should or should not, but it has struck me and many others, from what I have read, that we must have some long-range plans for this developing of the North. So we move up roads and all the things that go along with it. I am just asking if you people have had any over-all planning which might be helpful to us or to

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the government, or have you confined yourself to production, leaving it to us to plan according to what you are able to do?

Mr. McKinnon: I think there is much that can be done in consultation with government, but it is not usual for the oil industry to lay a problem of access, for example, on the government and then wait until the government puts in a road. It is usually the case that the industry, either a company or a combination of companies, will somehow get together to provide access or other facilities that are needed in order to support the activity.

Mr. Chappell: If you could say to us, "Within the area coloured red, we can produce it at \$1 a barrel; the next circle coloured yellow, we could produce it at \$1.10 a barrel" or something like that, it would give us some reasonable guidance to the priority of development.

Mr. McKinnon: One of the problems that enters into this is that in any exploration area we cannot forecast the size of the discoveries that may be made, and while we may consider it to be very attractive and highly prospective, a tremendous amount depends upon the size of the reserves that are discovered. If, for instance we found new reserves in the Mackenzie Basin that were as large as we are told they are on the North Slope of Alaska, we would then be playing in a different kind

of a ball game right now, but we cannot forecast the size of the discoveries.

Mr. Chappell: If I may ask just one more question although I expected I would be finished. Will the oil that is reasonably close to the mouth of the Mackenzie probably be brought down by pipe line or taken out by boat?

Mr. McKinnon: That is an excellent question. We as well as yourselves have listened to discussions concerning the construction of a pipe line from the mouth of the Mackenzie through Canada and into the United States. At the present time we are also looking forward to the test trials of the tanker *Manhattan*, which we hope will begin this year. It has to come one way or the other, and at this point I do not believe anyone could establish a plan or know which way it will go. It will again have to depend on what is found in those areas.

Mr. Chappell: I would like to go on but my time is up.

The Chairman: Mr. Woolliams.

Mr. Woolliams: I have quite a few questions that may have been asked, but I would like to ask any member of the Canadian Petroleum Association some questions particularly with respect to the notes that were added to your brief after you saw the Cabinet. Your brief deals with the 1967 agreement between Canada and the U.S.A. First of all, I wonder if you could tell me what the difference was between the original agreement of 1961, which really established the national oil policy, and another agreement or arrangement which perhaps modified the original agreement in 1967.

Mr. McIntosh: Mr. Woolliams, may I correct your statement. The addendum to the Canadian Petroleum Association was filed on June 16, which was prior to the meeting with the Cabinet.

Mr. Woolliams: Yes. That is what I meant. Did I leave the impression it was after that...

Mr. McIntosh: Yes, you did.

Mr. Woolliams: I meant that it was after the brief was prepared.

Mr. McIntosh: After it was prepared, but not after it was submitted.

Mr. Woolliams: Right.

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Mr. Connell: When the original arrangement was made on the national oil policy—I believe it effective on February 1, 1961—apparently some gentlemen's agreements were made with the United States on the amount of Canadian oil which the United States would allow in. As you may know, under the oil import policy of the United States, they restrict the import of foreign crude into districts I to IV to 12.2 per cent of the production from that area. They made an estimate of how much would be received from Canada and deducted that from the 12.2 per cent, and the balance was allocated and there were quotas given for imports of overseas crude. However, many times conditions came up when it was estimated they actually needed more Canadian crude. Some of it was needed for the Suez crisis. Hurricane Carla eliminated a lot of the production from Louisiana for a short time. There have been other emergencies, such as the necessity for a larger amount of fuel oil in the Great Lakes area. Practically every year, up until the last quarter of 1968, the estimates were exceeded. We now know that the agreement between the United States and Canada that was entered into in 1967 restricted the export of Canadian crude into Districts I to IV to 280,000 barrels per day and increased it to 26,000 barrels per day per year until 1971. In the first nine months of 1968 this was not enforced because

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of the fact that CAPLINE, which is a line from the Gulf Coast of Louisiana to just south of Chicago, was not placed in operation.

However, after it was placed in operation the restrictions were enforced for the last quarter of 1968. During the first four months of this year, when the Canadian crude allowable into that area was 306,000 barrels per day, the restrictions were not fully enforced. They were actually exceeded by something on the order of 50,000 barrels per day.

Mr. Woolliams: Would it be fair to say that what actually happened in 1967, as you explained and as I believe one of the members of the National Energy Board said the last time they were before this Committee, was that a modification was made to the 1967 agreement and there was endeavour, because of the situation and because of the circumstances which you explained, to accelerate some export to the United States within the limitations which you described that were put on in those districts.

Mr. Connell: This was to obtain a larger market for the future. It was necessary to do this in order to obtain a permit to route the Lakehead pipe-line through the Chicago area.

Mr. Woolliams: What has the cutback been per day of barrels of crude being exported from Western Canada since they started to implement the rules and conditions of the agreement?

Mr. Connell: The present nominations are approximately the 306,000 barrels per day.

Mr. Woolliams: But we exceeded that 306,000 barrels that is set down in the agreement we are now discussing. What was the cutback, sir?

Mr. Connell: Approximately 50,000 barrels a day.

Mr. Woolliams: Fifty thousand barrels a day. How much does that amount to in dollars and cents a day?

Mr. Connell: At \$2.50 a barrel it would be \$125,000 a day.

Mr. Woolliams: Right. That seriously affected the exports from Alberta to the United States?

Mr. Connell: That has been directly reflected in the exports of Alberta crude to the United States. It is not only Alberta that has been affected. There has also been some reduction in Saskatchewan. I would like to point out, though, that the market into District V has increased over the estimated amount. Currently it is running about 220,000 barrels per day. I think Mr. Udall estimated this at 181,000 barrels per day, so today we are ahead about 40,000 barrels per day in that particular area.

Mr. Woolliams: So basically the United States, in accordance with the agreement made in 1967, did cut back with reference to the exports in the districts you described, and even if they did it unilaterally they were within the terms and conditions of the agreement which was agreed to by this country and the United States.

Mr. Connell: Very definitely.

Mr. Woolliams: Right. You say in retrospect that the Association regrets that the agreement was kept secret and that it was entered into without consultation with your industry. I presume that problem there is that the acceleration of development of crude petroleum,

natural gas, and so on, depends on the amount of export on the market, and not only at present but the market for Canadian crude foreseeable in the future.

Mr. Connell: That is correct. We expect to get the major increases in exports. The Canadian increase would probably run on the order of 25,000 barrels per day per year.

Mr. Woolliams: As we are now importing about \$200 million worth of crude oil more than we are exporting, which is the result of Venezuela crude coming into the Montreal market and which has now penetrated past the line in the Ottawa area relating to "refined products", what is your approximation of how close we are at present day prices of imports to being able to compete with Venezuela crude coming into the Montreal market.

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Mr. Connell: We have had current differences in price of anywhere from 50 cents to \$1 a barrel.

Mr. Woolliams: Is there any truth to the fact—I do not think I have ever asked this question before—that some overseas countries from where crude is tanked into both the United States and Canada take tax on the open seas of 50 cents to \$1 a barrel on crude petroleum coming into this country, which really puts them into a position of either being less competitive or more competitive?

Mr. Connell: We know that the taxes which are extracted on some of this overseas crude oil is very high. I understand the royalty is based on a posted price rather than a discounted price at which a large portion of this crude is sold. Of course, the producer has to pay that higher royalty and they also have to pay a very high income tax rate in those cases.

Mr. Woolliams: Is this basically a tax by the exporting countries or is it a charge made by the internationally owned oil companies of the world?

Mr. Connell: What I am referring to is a tax and royalty by the countries from which the oil is being produced.

Mr. Woolliams: Is there any charge made—this is something you read about in the newspapers and about which you hear rumours—by international oil companies in reference to oil on the open seas? Is there any charge

made that goes back to the oil companies once it hits the open seas?

Mr. Connell: This is something with which I am not familiar.

Mr. Woolliams: Considering you talked about the 50 cent spread—some people have got it down in Calgary to a 10 cents a barrel spread whether they agree with the Association or not—does your Association think it is possible for a properly planned pipe line to compete with the Venezuela market at the prices as they laid down at the present time?

Mr. Connell: Not at the present prices.

Mr. Woolliams: Then I take it that your Association because of the economics is not in favour at the moment of a pipe line from Western Canada to Montreal?

Mr. McKinnon: There are other things besides prices that may enter into this. The Canadian Petroleum Association has not made a statement on getting Canadian crude to Montreal other than to support the idea that it should be very thoughtfully and carefully examined. The other factors that are mentioned as I am sure you have heard, involve the business of security of supply for Eastern Canada in the event of some international event that would dislocate all of the present arrangements for supplying off-shore crude to that area.

Mr. Woolliams: I see. I have only one or two other questions. As the survival of every industry and its development depends on its expansion of markets, both domestic and foreign, is your Association concerned with the fact that if this country is not able to come to an agreement with the United States in reference to pipe lines from Prudhoe Bay in the northern development through Canada and into the United States, the United States could make it very competitive and give tough competition to the industry if a pipe line were built from Prudhoe Bay to Anchorage? They could use then the large tankers that now exist in this modern world of automation and they could dump the crude petroleum in Seattle, San Francisco, Los Angeles—anywhere in Western United States—at a price with which Canada could not compete.

Mr. Connell: I doubt whether the price could be much cheaper. I think in order to be economic—of course, we do not have too much information on this Prudhoe Bay—they

would have to compete with the existing domestic prices in the United States.

Mr. Woolliams: I see. So basically you are of the opinion at the present time that Canadian industry operating in Canada and from exploration within Canada can compete with any markets that may arise from the north with regard to the transportation of that crude petroleum in the manner I have just suggested?

Mr. Connell: As far as the Puget Sound area is concerned, as I mentioned previously, we certainly do expect to have a reduction there. Some of this will be due to the proprietary interest in that crude oil from Prudhoe Bay. As you know, Atlantic Richfield Co. are proposing a refinery in the Puget Sound area which will come on stream at approximately the time they expect to start delivering crude oil out of Prudhoe Bay into that area.

Mr. Woolliams: I think this question was basically asked...

The Chairman: Mr. Woolliams, your time expired a while ago.

Mr. Woolliams: I just want to ask one or two more questions. Just one, if I might.

The Chairman: This question must be the last one. I want to be fair to everybody in this Committee and I do not think it is fair for you to go on much longer as I have four more people waiting to ask questions. I did ask for a general agreement on this in the beginning and I would like to stick to that agreement as much as possible without prejudicing anybody. Wind it up in one question and then I will call on Mr. St. Pierre.

Mr. Woolliams: It is very difficult—I am going to say this now on a point of order. I will not bother you, but I may as well say this in front of these witnesses because they are from Western Canada—to develop a line of questioning and come to some reasoning in eight minutes. I agree with what the Chairman has done. I have seen some committees operate that way and I have seen committees operate the other way. These committees now are taking the place of the very serious committees of the House of Commons. I think eight minutes to deal with such a serious subject as this is somewhat of a limitation.

The Chairman: If I may say, Mr. Woolliams, I think the time to have stated your point of order was at the beginning when I asked for unanimous agreement and not

three-quarters of the way through the meeting. I think this is a very important point and I left it open to anyone in the meeting to state their case at that time if they so wanted. I say, again, I am trying to be fair with all of you. I agree with you that your trend of questioning is very good, but we just have this one meeting. I know there are many people on the Committee who want to ask questions and this suggestion was made merely as an attempt to try to give everybody an opportunity. We cannot be magicians in two hours.

Mr. Woolliams: I will not take up any more time in the Committee. I just wanted to point that out to you, Mr. Chairman.

The Chairman: I am sure you did not have to point it out to me because I am quite aware of the facts. As I stated before, if you want to wind it up with one question, then I will call on Mr. St. Pierre.

Mr. Woolliams: No, that is fine, thank you very much.

Mr. St. Pierre: Thank you, Mr. Chairman. It is possible that some of my questions might take care of Mr. Woolliams' very belated point of order. It does seem a pity that he could not have brought it up at the proper time, but at any rate I will begin my questioning which deals with Prudhoe. I realize that the information on this is not concrete, but on the other hand I am quite sure the witnesses who are here tonight are in possession of every bit of information they can get on that discovery. What is the minimum amount and what is the maximum amount of this oil pool according to your latest information?

Mr. Brown: As you know, of course, all that information has been held very confidential, but we do hear a lot of things. We have heard it is close to 10 billion barrels and I also have heard it is as high as 50 billion barrels.

Mr. St. Pierre: At the lowest point what would this provide in a daily flow into the Puget Sound area or into area 5 of the United States?

• 2150

Mr. Connell: With a developed reserve—this would have to be proved developed reserves of 10 billion barrels—I would expect somewhere in the order of, say, 1.4 million to 1.8 million barrels per day. You must remember that these reserves cannot be developed

in a matter of a few years—of course, from what we hear about Prudhoe Bay this could be developed quite rapidly—but I certainly would not expect anything like 40 billion barrels or 50 billion barrels to be developed for quite a number of years, say, well into the 1980's and 1990's.

Mr. St. Pierre: How many years would it take to develop 10 billion barrels at a flow of 1.5 million a day?

Mr. Connell: Actually, we do not know enough about that. Possibly by 1980 they could have that much developed.

Mr. Brown: That depends on the productivity of the wells, for one thing.

Mr. St. Pierre: I realize that these have to be approximations, but they are important matters. By that time how much will the United States consumption have increased, according to your estimates, and to what extent is our flow out of Alberta and British Columbia likely to be reduced, if at all, by the Prudhoe Bay inflow?

Mr. Connell: We estimate that the United States demand could increase approximately 6 million barrels per day between 1968 and 1980. This is the total United States demand. As I mentioned in my talk previously, we expect that probably in District V the Prudhoe productions in Alberta and the United States may be reduced to, say, 125,000 barrels per day, which is approximately 100,000 barrels per day less than we are currently delivering to that area. However, as a result of that, it may be possible to deliver larger amounts into the Great Lakes area; for example, into Districts I to IV.

Mr. St. Pierre: Would it be reasonable to expect that if the American demand increases at the projected rate this 100,000 barrel a day loss would be made up in a reasonably short period of time?

Mr. Connell: We would certainly expect so.

Mr. St. Pierre: What estimates have you made? I realize that the estimates in connection with the difference in cost between the pipe line across Alaska, bringing it down out of Anchorage by tanker into the Puget Sound area, and the cost of a pipe line down the Mackenzie, connecting with the interior continental pipe line system would have to be pretty crude.

Mr. Connell: We have not made any such estimate. The pipe line across the Brooks Range in Alaska is going to be very expensive. It is estimated to cost some \$900 million, but we personally have not made estimates of the cost. I mentioned previously that—and this is not an Association figure at all—a large diameter pipelining, at about 3 cents per hundred barrel mile would suggest 27 cents per barrel pipe line cost across Alaska.

Mr. St. Pierre: Did your Association favour our encouraging the Americans to build down the Mackenzie?

Mr. Brown: I think we would favour it. However, there are so many angles that we do not know the answers to right now. In the future we will be able to do a better job of assessing this Prudhoe Bay discovery. We know that both the United States and Canada have their task forces working on this entire supply-demand problems. I do not think that we have really been in a position to say whether or not we favour it. I think most of us, deep in our hearts, do.

• 2155

Mr. St. Pierre: On a related question, Mr. Chairman, recently in the Indian Affairs and Northern Development Committee we had witnesses in regard to the Panarctic operation. We do not know if there is oil there yet or not but the speculation and hope is that there is a considerable quantity. They suggested to us that if a pool were found there comparable to Prudhoe Bay or larger there was very little hope of our having a market for that within Canada in a fairly short time. It was suggested that we would probably have to sell on the world market and on the interior market on a two-price system, retaining the Canadian price but selling abroad at a lower price. I am anxious to get the reactions of these witnesses to that.

Mr. Brown: There, again, I think that is something we have not gone into.

Mr. Connell: We would certainly expect, provided the shipment by tanker proves economically feasible, that a logical market for the oil from the Arctic Islands would be Eastern Canada—say Montreal or the Maritimes area.

Mr. St. Pierre: Assuming a success for the Manhattan experiment?

Mr. Connell: Yes, sir.

Mr. St. Pierre: It would not absorb it all, would it?

Mr. Connell: It depends upon how much they find. Of course, once you get that oil on the open seas, it could be moved over to Europe. However, that again would mean competing with this low-priced crude oil. Of course, it would also have to compete with overseas crude oil in the Montreal area or in the Maritimes.

Mr. St. Pierre: Has your Association taken any position on whether or not you favour the expenditure of federal and private funds on this major exploration in the high Arctic?

Mr. McKinnon: In our brief we mentioned the government's participation in Panarctic in terms that left no doubt that as an Association, our view is that we would prefer that the government was not directly involved as a participant. We understand that there are reasons in that particular instance why it makes good sense for government to participate. These have to do mainly with the elements of encouragement of an exploration program of that nature and with some of the social programs that the government has in mind or has going on in those areas. These we have been told about during our discussions here. By and large, we would object to the government being a participant in this business.

Mr. St. Pierre: You would rather that private industry had gone in with the same intensity and the same investment as the total of private and government investment now?

Mr. McKinnon: It is difficult, and perhaps pointless, to try to comment with hindsight on something that has already happened. However, we believe that had that been delayed until after the discovery in the North Slope of Alaska the kind of exploration program that that has generated would have ensured the development and the exploration of the Arctic Islands.

Mr. St. Pierre: Thank you.

The Chairman: I have Mr. Sulatycky, Mr. Harding, Mr. Cullen and Mr. Borrie, in that order.

Mr. Sulatycky: Mr. Chairman, is there any difference in the method of obtaining exploratory or mineral rights, as the case may be, between the Province of Alberta and the Northwest Territories or the Yukon?

Mr. McKinnon: In general, the approach for disposition of these rights is much the same. There are different sets of regulations, but the general approach and concept is the same. I could go into some detail on this, if you wish; I do not know how deeply you want to examine it.

Mr. Sulatycky: On a per acre basis, what is the average cost to an exploration company in Alberta and in the Northwest Territories?

Mr. McKinnon: To which cost are you referring?

Mr. Sulatycky: The cost of acquiring the exploratory rights.

• 2200

Mr. McKinnon: I am sure that the cost of acquiring exploratory rights in Alberta is very much higher than it is in most parts of the Northwest Territories. This is an item that is subject to great variations, and in a very short time you can see a change from a very low price to a very high price, or vice versa. I suppose, up until the present time, it is still fair enough to say that it is much higher in Alberta. However, this is always the case where you are dealing with situations closer to known production, which is the case in Alberta.

Mr. Brown: This has to do with new discoveries, too, because in Alberta there are many times when there is a new discovery made and it is quite prolific. The acreage surrounding that immediately goes sky high; whereas in Alberta the drilling is at a more mature stage; there is more geologic information available, and there are more discoveries made. I believe Mr. Connell pointed out that in the Northwest Territories only one discovery has been made to date. You will not find those high prices developing until more discoveries are made there.

Mr. Sulatycky: Would it be fair to say in all cases of the sale of rights in the Northwest Territories that the price is entirely dependent on the market place; that there is no control on it by government?

Mr. Brown: I do not quite understand the question.

Mr. McKinnon: The price is established by the factors of the market place that are related to what the buyer expects in terms of what it may return to him if he is successful; he is not always successful.

Mr. Sulatycky: So that there is no preference then being given to any firms involved in the exploration of the Northwest Territories and they are acquiring rights extremely cheaply because of you really do not know what is up there now.

Mr. Brown: We can outline generally favourable geologic trends but one never can be absolutely sure until one drills a hole in the ground.

Mr. Sulatycky: In answer to a question asked by Mr. Chappell one of the witnesses said that the main thing that the Association expects is that the government will ensure markets. Will markets determine the development of the potential or will the development of potential determine the markets? In other words, what comes first? If we have proven reserves, is it not then easier for us to get markets? Surely the United States is not going to enter into agreements with us for the purchase of oil which neither we nor they know we have.

Mr. McKinnon: I think you are right, that you do not develop markets unless you have the reserve potential to back it up.

Mr. Sulatycky: So that you would more likely be interested in seeing that government co-operates in every possible way in the development of the reserves than in obtaining the markets initially?

Mr. McIntosh: No. I think what we are saying is that you have to have the market to be able to afford to develop but you also must have the expectation of a long-range market to make the development worthwhile, especially if you are going into the back country where the expenditures are high and the rate of return is lower. So I think it is the expectation of long-term markets that we are after.

Mr. Sulatycky: Thank you, Mr. Chairman

The Chairman: Mr. Gilbert.

Mr. Gilbert: Mr. Chairman, I understand that there is a strong possibility that we are going to meet these gentlemen in early September out in Calgary. It may be that members that have not asked questions would be given first priority when we go out West to continue this examination. Taking those facts into account, it may be that they would be prepared to forego remaining questions?

• 2205

Mr. Sulatycky: Mr. Chairman, on a point of order, I do not know why Calgary is chosen as the site at which we should meet.

The Chairman: No site has been chosen, Mr. Sulatycky.

Mr. Sulatycky: I would suggest that it might be preferable and of greater benefit to the Committee if we met at a series of locations in Alberta.

An hon. Member: In Banff.

Mr. Sulatycky: No, not Banff. I am thinking of places like Fox Creek, a new town, which probably some of the companies in which the witnesses are involved were very instrumental in building and developing.

The Chairman: Mr. Sulatycky, this is a subject that will have to be handed over to the Steering Committee. If we get into this now we will be losing more time. The Steering Committee will take note of your representation in that respect.

Mr. Borrie: Mr. Chairman, I could make my questions very brief. I have a very strong reason for wanting to ask them this evening.

The Chairman: Is the Committee willing to go along with my suggestion? If so, we will allow Mr. Harding and Mr. Borrie a couple of questions at this time and then finish it off.

Mr. Barrett: I would like to make one comment, Mr. Chairman. This is not necessarily apropos the affair but because time is fleeting, because I came into this affair in the twilight when the lights were out and I thought there was a séance going on and that I was in the wrong place, because of the whole orientation of this meeting, would you accept a very short story apropos this particular gathering, the questions being put and the answers being given.

The Chairman: We have to go to another meeting. Will you make it brief.

Mr. Barrett: It reminds me of Seamus O'Brien and Katie O'Toole who, after courting for a long while decided to get married. Mr. Chairman, this is most apropos. In due course, of course, they had offspring, a young, strapping, wonderful little rascal, following which they had the second, third, fourth, fifth, sixth and on up to nine—all strapping young fellows. Along came number

10, a puny little rascal, and they were wondering what the situation would be. Seamus said to Katie, "Are you sure he is an O'Brien? It is dreadful. We have nine strapping young fellows and we have one little rascal who is not at all the same type of individual." Time went on and they grew up, the nine strapping young fellows, but little number 10 had not grown at all. Of course, Seamus was always doubtful about number 10 and was always questioning Katie. He would say, "Katie, are you sure that he is an O'Brien?"

The Chairman: Mr. Barrett, we cannot...

Mr. Barrett: Just a second, Mr. Chairman, and I will get to the point. The nine became very clever but the tenth was always a dismal, poor little rascal. Always Seamus was saying to her, "Katie, are you sure he is an O'Brien?" and she would always say, "Yes, he is an O'Brien." So finally Katie was on her deathbed, with a very very few moments left to live. While she was dying she said, "You know, Seamus, you have been a wonderful husband; you have always been nice, kind and charming to me, and always told me the truth. How could I ask for more?" So Seamus said, "You know, Katie, I am always worrying about number ten. He was never the same as the other nine. Are you sure he is an O'Brien?" She said, "Yes, number ten was an O'Brien, but the other nine were Murphys." This is the situation that you can expect when you are asking questions.

The Chairman: Mr. Harding.

Mr. Harding: Mr. Chairman, the hour is late. I regret that we did not have an opportunity to get some facts from these people on this pipeline into Montreal and the bringing of crude into the Eastern section of Canada. As I said, the hour is too late and I am not going to start asking questions now. Two questions are not sufficient. I had a line of questioning. I will let it go until another time.

The Chairman: Mr. Borrie.

• 2210

Mr. Borrie: Mr. Chairman, like Mr. Harding, I too was quite concerned about not getting some of the information that I thought we would from our witnesses. Probably it is because of the type of questions that we are putting to them. My first reaction about half-way through the meeting was to ask myself what really is your Association doing in

Ottawa. So I opened your presentation and I came to page 5, the bottom of the page, which says:

Some of the important areas of concern are described in the following paragraphs.

I am very interested in about three of those, the first one being: Why are Canadian companies not entering into research? The incentives appear to be offered by the federal government. From the suggestion that you are making in your presentation are you saying that we can only rely on American know-how, that we have no know-how in the petroleum industry ourselves, that there is no field of research that your Association or your companies could be entering into to employ some of the people who could be used in the research divisions in Canada? Why do we have to rely so much on American or other companies?

Mr. Brown: I do not think it is so much a question of reliance. If there were more incentives for American companies I think they would spend more money on research in Canada than they do. They have the same incentives that the companies incorporated in Canada have. Perhaps you can describe that side of it.

Mr. Steele: I know a little bit about that. It was meant only to say that American companies do a lot of scientific research and the incentives that are available now do not extend to them. Since it has been taken out of the Income Tax Act and put in a separate act that separate act provides only that companies incorporated in Canada qualify for these incentives. We were merely trying to say that we do not see why all companies should not qualify so long as the scientific research is done in Canada. Surely it should be a benefit to Canada if we could encourage American companies to establish scientific research facilities up here. They would hire Canadians, it would benefit Canadians and Canada to do it, and we do not see why it should be restricted so that they are not encouraged to do that. Not that Canadian companies are not encouraged to do scientific research, because they are, by the Act, but we are just saying that, in addition, the American companies do a lot of it and why not have them do it up here, if we can get them to do it?

Mr. Borrie: Are your companies themselves actually involved in research work?

Mr. McKinnon: Yes, they are.

Mr. Borrie: Why is it that we cannot seem to get the answers on the cost of transporting oil between Calgary and Montreal or the information on what the comparative cost would be, which is of vital concern to your industry, for the movement of Prudhoe Bay oil or the movement of oil from the Arctic Islands eventually? These are the questions that have been asked by members and we do not seem to be able to get the answers to them from you. In which direction are your companies heading in respect of research.

Mr. Steele: We were not thinking of that kind, I do not think, in talking here about scientific research. In speaking of scientific research we were thinking more of the scientific type of research into drilling techniques and things of that nature.

Mr. Borrie: Surely marketing is also part of your concern. You just cannot produce without thinking of a market.

Mr. Steele: Some of those types are not qualified for this grant under the Industrial Research and Development Incentives Act.

Mr. Borrie: What I am really getting at is what you are doing for yourselves. Does there always have to be a government incentive for market research of scientific research? This is what I am really getting at.

Mr. Steele: No, I do not think there always has to be.

Mr. McIntosh: I would like to speak to your problem about the transportation of oil in the Arctic. There is a whole new technology that has to be developed and there are a lot of people working on it. I am referring to the

• 2215

handling of muskeg and this thermal erosion, if you will. These are all technical problems and are so extremely complex that neither we, the Americans nor anyone else, including the Russians, have a solution at the moment for the transportation of oil in the Arctic. All three are working on it.

Mr. Borrie: I will leave that question, Mr. Chairman. As is known, the University of Alberta has done a great deal in that line, which I assume would be available to your industry.

The second concern that you mention in your brief is the encouragement of Canadians to invest in Canadian corporations. What is your Association doing to promote Canadian interests investing in Canadian corporations?

Mr. McKinnon: We are doing a good deal amongst the public at large in trying to inform them of the exploration-production aspects of the industry. In the paragraph at the bottom of page 5 we merely point out that in Canada Oil and Gas Land Regulations non-Canadian companies operating in Canada are permitted to acquire permits which give them the right to explore but they are not permitted to take leases which gives them the ownership of whatever they discover and this seems rather anomalous to us, particularly when Canadian companies can go into other countries, as they are doing, and operate in any normal fashion alongside the indigenous companies.

Mr. Borrie: It seems rather ominous to me that those two paragraphs seem to depend so greatly on American involvement.

I am sorry, my time is running out and I have one more question which deals with the paragraph at the top of page 6 where you are rather critical about the Canadian Government's involvement in the North. What were your companies doing in the North before the government sparked the initiative for development and exploration in the Arctic Islands and into the North?

Mr. McKinnon: There were quite a number of Canadian companies operating in the Arctic Islands and holding lands who committed their property to the Panarctic project long before the government ever came along in the expectation that this would carry on as a normal joint participation venture not requiring government assistance. The government's entry came at a later date.

Mr. Borrie: Was my information wrong? I assumed that your companies were not doing anything, otherwise the government would not have become that greatly involved in it?

Mr. McKinnon: It is true that it had reached a certain stage where, under conditions existing at the time, it did not appear that that exploration program would contin-

ue. We grant this. The government came in and made it possible for it to continue then. What I mentioned earlier was that if the timing of Prudhoe Bay had been a couple of years earlier, then it would not have required any government support to continue; in other words the program that is going on now we think would be going on in any case without the government being involved in it.

Mr. Borrie: Thank you, Mr. Chairman. I do not buy the answer.

Mr. Langlois: Mr. Chairman, I would like to ask just one question for clarification. Mention has been made a few times during the meeting of a pipeline from the West to the Montreal area. Did not somebody say at one time that the price per barrel was higher in Edmonton than the imported crude landed in Montreal?

Mr. Connell: That is correct.

Mr. Langlois: So what is the point in trying to make a fuss about that?

Mr. Connell: We have not been proposing this and The Association has not taken a stand either way. They feel there must be much more investigation into this before they decide one way or the other.

Mr. Langlois: Is there a future possibility of petroleum being landed in Montreal cheaper from the West than from the Orient or Venezuela?

Mr. McIntosh: I think there is always that possibility. One of the jeopardies of relying on foreign supplies entirely is that you are also relying on foreign prices. I would not expect that this would be a matter of great import in the immediate future but it is a business risk.

The Chairman: At this point I will have to call the meeting to an end. I would like to thank the officials of the Canadian Petroleum Association for being with us tonight.

The meeting is adjourned.

HOUSE OF COMMONS

First Session—Twenty-eighth Parliament

1968-69

STANDING COMMITTEE

ON



NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. LEONARD HOPKINS

MINUTES OF PROCEEDINGS AND EVIDENCE

No. 28

WEDNESDAY, JUNE 25, 1969

Respecting

Annual Report of National Energy Board for year
ending December 31, 1968.

WITNESSES:

(See Minutes of Proceedings)

STANDING COMMITTEE
ON
NATIONAL RESOURCES AND PUBLIC WORKS

Chairman: Mr. Leonard Hopkins

Vice-Chairman:

and Mssrs.

¹ Aiken,
Beaudoin,
² Chappell,
Code,
Comeau,
Deakon,
Downey,

Gilbert,
Gillespie,
Harding,
Horner,
Langlois,
Mahoney,

Marchand (*Kamloops-
Cariboo*),
⁴ McNulty,
Orange,
⁵ Perrault,
Schumacher,
³ Sullivan—20.

(Quorum 13)

R. V. VIRR

Clerk of the Committee.

Pursuant to S.O. 65 (4) (b)

¹ Replaced Mr. Woolliams on June 25, 1969.

² Replaced Mr. Cullen on June 25, 1969.

³ Replaced Mr. Barrett on June 25, 1969.

⁴ Replaced Mr. Borrie on June 25, 1969.

⁵ Replaced Mr. St. Pierre on June 25, 1969.

REPORT OF THE HOUSE

FRIDAY, May 30, 1969.

The Standing Committee on National Resources and Public Works has the honour to present its

FOURTH REPORT

Pursuant to its Order of Reference of February 20, 1969, your Committee has considered the following items listed in the Estimates 1969-70:

Votes 1, 5, 15, 20, 25, 40, 45 and 50 relating to the Department of Energy, Mines and Resources;

Votes 55 and 60 relating to the Atomic Energy Control Board;

Votes 65, 70, L15, L20, L25 and L30 relating to the Atomic Energy of Canada Limited. (Research Program);

Vote 75 relating to the Dominion Coal Board;

Vote 80 relating to the National Energy Board; and

Votes 1, 5, 10, 15, 20, 25, 30, 35, 40, 50, 55 and 60 relating to the Department of Public Works.

Your Committee recommends that as soon as possible the government allocate more money for scientific research projects that are now under way, as well as to continue new programs for the future.

During the Study of the estimates of Atomic Energy of Canada Limited, the Committee learned that more and more funds from that company's regular budget will be required to continue the operations of several nuclear power generators until such time as private enterprise is financially capable of taking them over, probably about 1978. In the meantime, these established expenses will be a drain from the research funds of the company and these should be supplemented.

Canada has been in the forefront in nuclear research in the world with emphasis on the peaceful role of Atomic Energy and your Committee recommends that increased financial support be given to research projects in this field.

The Committee commends the government on the establishment of the Inland Waters Centre at Burlington and the work being carried out there on water pollution research. We recommend that this be given full and increased assistance and that other complementary centres be set up where needed.

Your Committee is concerned by the increasing magnitude of air, water and soil pollution and the jurisdictional conflict which hampers the finding and implementing of proper solutions.

Your Committee recommends that the government draft a code of standards for the cleaning up of and the future protection of all Canadian waters;

that provincial approval of such a code be sought; and that the federal government provide an enforcement procedure—if necessary by means of an amendment to the criminal code.

Your Committee also recommends that a centre or centres similar to the Canada Centre for Inland Waters be set up to centralize all existing and future federal research in air and soil pollution and to extend and speed up such research so that codes of standards may be drafted to protect the air and soil from pollution.

During its study of the estimates of Atomic Energy of Canada Limited, your Committee was informed that there would not be any "Canadian Produced" heavy water available in Canada this year. Your Committee recommends therefore that the words "Canadian Produced" be deleted from vote L20 thus enabling the company to purchase heavy water from non-Canadian sources.

The Committee wishes to state that it has been greatly impressed by the contributions from the Canadian science community and commends all personnel involved in scientific progress in Canada on their achievements.

Your Committee commends these estimates to the House.

A copy of the relevant Minutes of Proceedings and Evidence (*Issues Nos. 12 to 26*) is tabled.

Respectfully submitted,

LEONARD HOPKINS,
Chairman.

MINUTES OF PROCEEDINGS

[Text]

WEDNESDAY, June 25, 1969.
(29)

The Standing Committee on National Resources and Public Works met this day at 3:45 p.m., the Chairman, Mr. Hopkins, presided.

Members present: Messrs. Aiken, Beaudoin, Chappell, Comeau, Downey, Harding, Hopkins, Langlois, Mahoney, McNulty, Orange, Perrault, Shumacher, Sullivan.—(14)

Witnesses: Mr. James R. Mott, Manager, Canadian Commercial Coal Dock Operators Association; Mr. P. J. Lavelle, Bituminous Coal Institute.

It was agreed that members would be restricted to a 5 minute period each on the first two rounds of questioning.

The Chairman introduced the witnesses and requested Mr. Mott to read his opening statement.

After which the members questioned the witnesses.

There being no further questions the Committee adjourned to the call of the Chair.

R. V. Virr,
Clerk of the Committee.

EVIDENCE

(Recorded by Electronic Apparatus)

Wednesday, June 25, 1969

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The Chairman: Gentlemen, as I see a quorum I will call the meeting to order. This meeting was called for the purpose of a hearing requested by the Bituminous Coal Institute of Canada and the Canadian Commercial Coal Dock Operators Association. I would like to welcome to our Committee today Mr. James Mott, General Manager of these two organizations, the first one being a research part of the total organization. We also have with us today Mr. Pat Lavelle who is with the Bituminous Coal association.

First of all, I will call upon Mr. Mott to present his brief to us. We are pleased that he has taken the initiative to do this. Then I will open the meeting for questions. I think today we will revert to our rule of 10 minutes per speaker unless it is the desire of the Committee to have the time shortened for the purpose of this meeting. What is your desire?

Mr. Aitken: I think 10 minutes are a good maximum, Mr. Chairman.

The Chairman: Then we will leave it at 10 minutes.

Mr. Chappell: Has it been determined how long we will be sitting?

The Chairman: We will be sitting until 5 o'clock.

Mr. Chappell: Perhaps if there is going to be a 30-minute opening statement we might be wise to limit it to eight minutes to give every person a chance.

Mr. Perrault: We should limit questions on the first round to five minutes.

The Chairman: Is it agreed then that we allow five minutes for each speaker on the first round?

Some hon. Members: Agreed.

The Chairman: Thank you, gentlemen. I now will call on Mr. Mott to deliver his brief and welcome him once again to the Committee.

Mr. James R. Mott (Manager, Canadian Coal Dock Operators Association): Thank you very much, Mr. Chairman. First of all, I would like to make one comment. It is very unfortunate that some of my directors are not here today, but due to the short notice of this meeting, it was just utterly impossible for them to break their other commitments. However, they asked to have their acknowledgements brought to you and their regrets expressed.

If I may, gentlemen, I would like to read this brief to you.

Our request to appear before your Committee has been brought about by a number of factors. The most important is the concern of the Canadians involved in this central Canada industry, that it is, in fact, very close to being pushed out of existence.

We do not seek to preserve this industry for our own selfish reasons, but because we feel certain and we are backed by history, that the cycle will again turn and the industrial heartland of Canada will again urgently require to close-by coal resources of central United States. This next time the facilities will not be available to handle the demand unless sober thinking authorities take steps now to preserve them.

The Bituminous Coal Institute of Canada and the Canadian Commercial Coal Dock Operators Association are Canadian organizations employing Canadians and contributing to the general well-being of the Canadian economy. They are being needlessly and carelessly pushed aside in a flurry of optimism which is centred around the myth that Canada has an abundance of other fossil and nuclear fuels which will last an eternity.

Our appearance before this Committee is not to take issue with the other fuels. We realize more than most that this is a competitive business operation and coal, especially, with its muddled past in this country, is a long way from taking its rightful place as a glamorous and popular fuel.

In our letter to your Chairman, a copy of which is attached, we mention four specific points we would like to discuss with you. They range from general topics such as the role of coal in a continental fuel policy, to the removal of coal as a fuel in defence and other government installations.

We realize also that item number one in our letter to Mr. Hopkins, that is the removal of the duty, is subject matter for another committee.

This we have already taken up with several of our Ministers of Finance. We are pleased to hear from the Hon. E. J. Benson's budget of June 3, 1969 that he has agreed to the reasoning in our briefs submitted to him and has removed the duty on coal. In these briefs we contended that the price of all fuel was predicated on the price of American coal laid down in Canada and the elimination of the duty payable on it would check increases of fuel costs and act as a brake against inflation.

During the past several years and dealing with successive governments, this group has urged the development of a continental energy policy. It has been our firm conviction that fuels should be utilized at the most economical location and that all subventions, tax rebates, low interest loans, etcetera should be recognized at their true value when estimating cost. Thus it is logical to export more gas and oil to the western United States from our Western Provinces rather than pump it from Alberta to Ontario and to import coal into central Canada from mines situated up to 200 miles south of the Great Lakes. If we were to import more coal, the Americans most certainly would be receptive to increasing imports of gas and oil.

The policy of the government has been aimed directly against the United States.

The Atlantic Provinces and Quebec are importing, apparently without restraint, residual oil from Venezuela, other South American countries and the Middle East. This residual oil has no market other than as a

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fuel. This oil is, we understand, paid for in American dollars. Now, rather than use the subventions to allow the Nova Scotia coal to compete against this invader in their own back yard, the government causes the New Cape Breton coal with its increased subvention due to the increased distance, to leap-frog over these markets and enter Ontario to com-

bat American coal. This appears to be a gross discrimination against our close neighbour in favour of other more distant and politically unstable countries.

The attitude of this government has been instrumental in the closing of 50 per cent of the coal docks on the Great Lakes in the past 20 years.

We feel that it is extremely important that everything possible be done to maintain the few bulk docks left in Canada. It seems incredible that since the development of the St. Lawrence Seaway, the number of Canadian docks left open to the Seaway has been drastically reduced.

I will make examples. On Lake Ontario, if the Kingston Dock is closed, which will happen if the Department of National Defence Base at Barriefield is converted to gas, there will not be a deepwater dock between Oshawa and Prescott capable of handling bulk commodities.

On Lake Erie the situation has deteriorated even further and the federal departments concerned have been looking at the possibility of closing out some of the few remaining ports rather than endeavouring to maintain the little that is left.

There are two things which seem to be entirely overlooked in considering the importance of the few remaining Canadian coal docks:

1. When coal is excluded from an area because of the elimination of an adjacent dock, the ultimate control of the prices of other fuels in that area is immediately eliminated. This would seem to be a matter which should be of some concern under the present inflationary conditions.

2. As long as a bulk dock can be kept open to handle coal, there remains the possibility of its being developed at a later date to fill an additional need in the area. A perfect example of this is the iron ore pellet dock at Fort William which has been developed over the past two years from the small remaining nucleus of a coal dock operation.

We feel that unless there is a decent basic network of bulk docks around the Great Lakes, the St. Lawrence Seaway is not much of an asset to the taxpayer in central Canada.

The companies we represent have been handicapped in Canada initially because we sell imported coal. There has been a resistance to it in the government and in other

areas because the Canadian government, quite naturally, has been hard-pressed through the economic realities of Cape Breton to sell Nova Scotia coal. In Canada the word coal and subvention are one and the same and the impression abounds that coal is to be avoided at all costs.

Added to this the Dominion Coal Board which was established to supervise and be the voice of the industry in government, has been dealing for the most part over the years with Nova Scotia subventions. The Coal Board has not been, nor could it be, the effective representative of an industry which needed clarification and justification at every turning point over the past 20 years.

To make matters worse, the government of the day initiated in the Senate close to two years ago, a bill which would abolish the Coal Board. It was withdrawn because of technical reasons and has not been seen since. From time to time we hear of it, but when the government intends to introduce it again has been a subject of high mystery.

We are not opposed to the abolition of the Coal Board. Indeed, we are in favour of it, but unless the government moves quickly to end the doubt and the uncertainty that exists, the Coal Board will live on in a limbo which is only reserved for defunct government agencies that no one knows what to do with.

Our comments will, no doubt, be taken as a harsh criticism of the Board. They are not intended to be so. They are made in a spirit

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of anxiety that the government is not hearing the voice of the industry as firmly as it should and the consequences of this muted voice are becoming more disastrous every week.

In the past year we have attempted on many occasions to understand and penetrate the feelings of the government when it comes to coal. Through the resources of the Assistant Deputy Minister of Energy, Mines and Resources, we have had some clarification, but any steps are, of course, cancelled by the state of utter confusion when it comes to the Coal Board.

Once the Coal Board is abolished it does seem that the government intends to invest the responsibility for this industry in the very capable hands of the Assistant Deputy Minister of Energy, Mines and Resources.

We have proposed to him that an Advisory, Ad Hoc Committee of the industry be set up to consult with him and his officials on future government policy in the area of coal, and also so that we as an industry will be able to put our views before the government on energy policy in general.

We have suggested nothing but an Advisory Committee. We do not want any Boards, Secretaries, Civil Servants. We simply want an open line to government whom, we hope, will receive our views with an open mind. On our own, we have canvassed coal people in both Eastern and Western Canada, and have found general agreement on the basic principle of a committee. We have agreed, however, not to proceed with any further organization of such a committee until the government has acted on the Coal Board.

We are not a large industry compared to the oil and gas complexes in this country. Therefore, it is easy to understand why without adequate representation and a strong voice in the government's ear, we are easily dismissed.

We feel that the Advisory Committee, made up of equal representation from Eastern, Central and Western Canada, and with the option of submitting individual or minority reports when a matter concerns one region alone, is the only way we will continue to be a factor at all. It is our view that it is imperative that a move be made to establish this committee as quickly as possible.

When it comes to practical demonstrations of the importance of a voice in the affairs of government, nothing could explain it more easily than a documentation of our relations with the government during the past year.

There is not enough paper or time to document the number of people, from Ministers to engineers to clerks that we have seen in the Government of Canada, in an effort to stem the tide against coal. We have an economical commodity. The Government of Canada has been saying constantly to the taxpayers that it is interested in saving money. The message hasn't penetrated the civil service.

For example:

The Civil Services has published a "Staffing Guide" for boiler plants, which in some cases shows double the men required for a coal-fired unit than a similar unit fired by oil or gas. Nowhere in industry does such a situation exist.

In a government which is unbiased and interested in saving money how does such an obviously faulty situation continue to exist and influence cost calculations.

When we tried to ascertain the reasons for these decisions we were always told that they had been checked and authorized by a group called the Interdepartmental Fuels Committee, and to top it off, we were told that it was chaired by a coal man, that is, a representative of the Dominion Coal Board. This seemed to resolve all problems. What could be wrong with the desecration of the coal industry, if its demise was being presided over by one of our own?

We object to this of course. But our attempts to change it are like pushing a cannon uphill. Every time you stop for a rest, it rolls back down.

We were constantly told that the problem with coal was, not that it wasn't low enough in price, but that it cost too much to burn. We were told that if we could come up with an economical boiler we would have the opportunity to demonstrate its capability and that the coal industry would be better off.

Gentlemen—we have come up with such a boiler "*THE VEKOS POWERMASTER*"—but we have also come to a dead end.

Despite repeated efforts to get the govern-

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ment to test, or observe the boiler in operation, and having gone so far as to offer to pay to have government observers take a look at it in its natural habitat, we have had nothing but nodding gestures from the civil servants who determine these matters.

We have attempted to stem the tide of conversion by offering to instal this boiler on one of the government's own heating establishments. We were so sure of this adequacy that we even offered to take over the total management of the boiler plant and sell the steam to the government. It is an interesting idea that has gone nowhere.

We do not wish to belabour the government over these policies, nor do we wish to criticize the dedicated civil servants who implement them. What we do wish is to bring the attention of your Committee to the difficulty we are having in maintaining ourselves as a strong and viable industry in Canada.

There is a basic conflict in a government which would spend thousands of dollars on

experimentation and then refuses, when the genuine product comes along, to even consider it.

There is something wrong when a government inflicts a mortal wound on a government agency by indicating that it will abolish it, and then refuses to use the knife rapidly.

There is a problem when it takes endless meetings, telephone calls, telegrams and urgent trips to civil servants' offices, to elicit information that should be forthcoming without a moment's hesitation.

We have attempted to keep these remarks general so that in questioning and cross-examination more facts might become available to you and the members of your Committee.

Our only aim in bringing forward what we have today is that we will be better able to communicate our wishes and desires to the Canadian people.

Thank you, Mr. Chairman.

The Chairman: Thank you, Mr. Mott. Having heard the brief, I wonder if there might be some disposition on the part of certain members of the Committee to extend the time for questioning. I recognize Mr. Harding.

Mr. Harding: Mr. Chairman, I have a few questions I would like to ask. I have listened with a great deal of interest to Mr. Mott and probably he could give us a little more information.

Could you tell us how much coal was imported into Canada last year from the United States.

Mr. Mott: I assume about 15 million tons or approximately that amount.

Mr. Harding: Is this more or less than in the previous year?

Mr. Mott: More.

Mr. Harding: And how about 1960?

Mr. Mott: In 1960 it was not much.

Mr. Harding: Then we are importing more now than we have been for the last number of years.

Mr. Mott: Yes, we are importing more, but basically for two reasons. It is a sellers market in the world now for coal because it is the only energy source—and that includes nuclear—of which we know we have enough

for the next 1,000 years. We are very doubtful about oil, gas and nuclear but we know coal is a proven resource. It is so much of a sellers' market that the Steel Company of Canada, for instance, who needs coal for their steel, have actually bought mines. Ontario Hydro, who sees the handwriting on the wall, are now making contracts to receive coal for the next 30 years. Why are we using more? You know as well as I do that the electricity we are using and that Ontario Hydro is using is a good deal more, and all that has increased has been in the coal manufacturing and in power generation.

Mr. Harding: Mr. Chairman, I would almost take from the brief that there had been discrimination against the United States coal industry but now we find that there has been a considerable increase in coal imports. Do your companies bring this coal into Canada or are there other companies that do this importing?

Mr. Mott: We do the importing.

Mr. Harding: How do they handle it?

Mr. Mott: On Canadian ships across the St. Lawrence.

Mr. Harding: Do they not use the bulk docks to unload?

Mr. Mott: Yes, we are using the bulk docks now, but the distribution of the coal has been so curtailed that, as we say, we lost over 50 per cent of the docks in the last 20 years.

Mr. Harding: Despite the increase in the coal imports.

Mr. Mott: Yes, because the increase now is only going to steel companies and to hydro.

Mr. Harding: May I ask Mr. Mott another question. Are you aware of the potential for coal imports over the next 10 or 15 years? Do you have those figures?

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Mr. Mott: No, I cannot hazard a guess on what it might be over the next 10 or 15 years. I will say, though, sir, if I may, that obviously steel producing is going to increase and they are going to need more coal, hydro is going to increase, and due to the difficulty the atomic energy people are having in the States it is a pretty fair guess that it will be thermal development of hydro up here. However, we

are now running into a very serious problem, that of air pollution.

When we first started talking about air pollution people spoke of sulphur dioxide and said that it was the culprit that caused all the damage and if we got rid of that we would be all right. Now they are beginning to realize, particularly in view of what is happening down in California where they do not burn coal, are now not burning oil, only burning gas, and have more smog now than they ever had, that it is probably not sulphur but oxide of nitrogen. If that is true, and it looks like it might be, then the emphasis is going to be to swing off gas and oil again and come back to coal. If that is the case we are not going to be able to get coal unless we make plans for it now because it is such a sellers market that we will not have any priority to obtain it.

Mr. Harding: Mr. Chairman, may I just come back to this import picture again. You are basically importing coal for energy.

Mr. Mott: No, they import their own.

Mr. Harding: They import their own. You are not taking this type of importation into consideration in your brief at all. I would like to point out to Mr. Mott that when we had the Energy Board before us they anticipated a very sharp increase in imports from the United States, increasing over the next few years up to a fantastic amount of tonnage. You are interested more in coal for industry, apart from steel and so on.

Mr. Mott: That is quite right, sir. They do their own importing and we are interested in what we require.

Mr. Harding: My time is up. Thank you.

Mr. Perrault: Mr. Mott, I would like to put a few quick questions because I am under this time restriction, as are the other committee members.

On page 2 of your brief you mention that Canada will urgently require the close-by coal resources of the central United States, as the cycle again turns. What is the feasibility of shipping by unit train coal on a competitive and economical basis from the Maritimes and western Canada? Is it possible that we could evolve technology which would enable Canadian miners to benefit from the market potential of central Canada to a greater extent than they are at the present time?

Mr. Mott: Oh, undoubtedly, there could be a marked increase in the production of Cape

Breton. There has been already. They have a man down there who came over from the Coal Board in England and he has done a remarkable job. However, I think that the existing mines they have do not lend themselves to modern equipment and there will have to be new mines. I understand they are bringing a new mine in now. But all coal is not the same. That is a coal that is primarily suitable for coking, in other words for steel making, and I think that will be where the market is. They will be able to ship coking coal all over the world.

Mr. Perrault: They have bituminous coal in western Canada, however, and substantial resources of it.

Mr. Mott: They have bituminous coal, again of coking quality, yes.

Mr. Perrault: But you say that there is a difference in quality which will make it necessary to bring in United States coal.

Mr. Mott: Not necessary but it will be more economical because one is only 200 miles away and the other is 2,000 miles away, also you can burn the American coal in an industrial boiler more efficiently.

Mr. Perrault: How many men are employed by the two organizations noted in this brief at the present time and, for example, ten years ago? I would like to find out the size of the payroll that we are talking about.

Mr. Mott: Our group consists of various companies. I would have to check on that. There has been a decrease but I could not tell you the exact number.

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Mr. Perrault: You mention in the brief a number of reasons for the industry experiencing difficulties. On page 3 you say the attitude of the government has been instrumental in the closing of 50 per cent of the coal docks on the Great Lakes in the past 20 years. But is not one of the reasons for a decline in the use of coal by some industries the fact that it is not the cleanest of fuels? And in this respect, can you claim any really clean loading operation in Canada? If so, I would be interested to know where that loading operation is.

Mr. Mott: You have put your finger on a very vital point. True, the people in Canada have been lagging, as well as the people in the States, in that respect. There is no fundamental reason that a coal-fired unit could not

be just as clean and just as spotless as an oil and gas unit. As a matter of fact, they can be. With this Vekos Powermaster we are talking about, unless you were accustomed to being in a boiler room you could not tell what fuel we were burning.

Mr. Perrault: The point that I was trying to make is that the government has been blamed for some of the industry's problems, yet the competitive situation surely is very much different than it was 20 years ago with the advent of natural gas and some of these other fuels.

Mr. Mott: It is a matter of economics. With natural gas the cost is a great deal higher.

Mr. Perrault: It may be but it has some other compensating advantages. However, the question that I asked related to the loading of coal. It is an issue in my constituency, certainly in my area, at the present time. A new bulk loading operation is being contemplated for the loading of coal within about a mile from a settled area and there is concern whether or not the loading of that coal will cause dust to settle on those homes.

Mr. Mott: It should not, if it is done properly.

Mr. Perrault: Thank you, Mr. Chairman. I will come back later.

The Chairman: When I do use the gavel I do not want you to stop right on the "and" and the "but", you may finish your question. But I would appreciate it if each member would respect the gavel and finish off on that particular question. Mr. Downey.

Mr. Downey: Mr. Mott, I would imagine that probably one of the reasons gas and oil are used in preference to coal would be ease of transportation through pipe lines and I was wondering if the industry itself had ever made any studies or investigated solids pipe lines.

Mr. Mott: We have piped coal a distance of 125 miles. As soon as we did that the railways came along and reduced their price below the cost of putting it through the pipe line. So we went back to the unit train.

Mr. Downey: Were you using a pelleted product?

Mr. Mott: No, we were just using a unit non-stop train. They use slurry in the pipe line.

Mr. Downey: I see. There has been fairly conclusive research that would indicate then that the pollution problem was not any greater with coal than with some of the other products.

Mr. Mott: Two of the countries which have the tightest air pollution laws in the world are England and Germany. This unit we are talking about burns coal and, incidentally, it also burns waste products. It will burn sawdust along with coal. As a matter of fact, in one place they are burning chicken droppings along with the coal. They meet all requirements both in England and in Germany—and they are two of the toughest countries in the world for air pollution laws.

Mr. Downey: Are there any tests underway? Is anything being done at the present time?

Mr. Mott: Not in Canada. I was hoping we would get one in with the Department of Public Works, but I have not been able to stir up any enthusiasm there. I think we will be putting one into an installation that uses sawdust as well as coal, 50 per cent of each. You see, you use sawdust as a waste product and recover B.T.U.s from it.

Mr. Downey: In Alberta I see the Japanese have developed and are working on projects and we are going to be exporting coal. What do you look for in the future in regards to exports of this?

Mr. Mott: From Western Canada? This is purely a personal view, because I am not really connected with the Western Canada coal producers. I would say that I do not think they will meet their quota next year.

It is not the easiest thing in the world to develop a coal mine. I think, though, that within two or three years possibly they will be shipping 15, 16, 17 million tons a year.

Mr. Downey: Do you look for this to keep on expanding?

Mr. Mott: Japan was taking coal from Australia, but the Australians fell down on deliveries. They were also taking coal from the United States, and they did not meet their deliveries. We are the third country, and we should take advantage of the experience of the other two countries and meet our productions.

Mr. Downey: I see.

Mr. Mott: If we do, there will be money, and a lot, for a long time.

Mr. Downey: Thank you, Mr. Chairman.

Mr. Orange: Mr. Chairman, there are two or three things in this brief on which I would like to comment.

I would like some confirmation of the statement on page 3 that the oil coming into Canada from Venezuela is paid in American dollars. I doubt if this is the case. I think this is an oversimplification of the economics of the situation with regard to what is generally known as east of the Ottawa River. I wonder if there is really much value to that particular statement.

The second statement that concerns me is on page 4, where it is indicated that once coal disappears from a particular market area, the price of other fuels in that area is increased. I would question this statement, knowing the competitiveness of the fuels industry. Do you have any evidence on this, sir?

Mr. Mott: Yes, on that last subject we certainly have. Do not forget, when you convert a boiler or heating plant from coal to oil or gas—it is usually an oil-gas standby—you cannot convert back without expenditure of a considerable amount of money. Once they are converted over and they have their first contracts for fuel, either oil or gas, for "X" number of years, and "X" number of years if over, then the price jumps again, whereas the price of coal has not gone up like that. We have noticed that quite markedly, sir.

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Mr. Orange: My only comment on that is that once I converted from coal to oil and my fuel costs for a fairly large unit were reduced. However, that is incidental.

Mr. Mott: That is quite right, but do not forget you might have been using a 40-year-old coal installation and you are putting in a brand new modern oil unit. I would venture to say your oil costs would be down.

Mr. Orange: Really all we did was put a burner in the coal stove. However, it seems that the basis of your concern really is the uncertainty of the Dominion Coal Board.

Mr. Mott: That is one thing, yes.

Mr. Orange: You indicate that you have had discussions with the government regarding the Coal Board and you really in effect

are saying that if the Coal Board is to be abolished, you would like a decision very quickly. Do you anticipate that with the abolition of the Coal Board—which is still on the books—that you will have a better relationship with the energy branch of the Department of Energy, Mines and Resources?

Mr. Mott: Yes, sir.

Mr. Orange: Has your association approached the fuel research people in the Department?

Mr. Mott: Yes, we have. We work closely with them.

Mr. Orange: Have they made any technical analysis of this Vekos Powermaster?

Mr. Mott: No, they were working on their own development.

Mr. Orange: Have you asked them to do this?

Mr. Mott: No. They know we have it and they know we are bringing one in, and probably that is why they have not. But they did not do it before, because they were working on their own. I might say they just got their own finished and I cannot blame them for not dropping their own development which they are trying to bring to an end and go on order.

Mr. Orange: Having developed this particular unit, did you ask the government of Canada or the Department of Energy, Mines and Resources to give you an evaluation on it?

Mr. Mott: Yes. As a matter of fact they said that they thought they might have to send a man over to England where there are some in operation. Nothing further was done.

Mr. Orange: How long ago was this?

Mr. Mott: Three months.

Mr. Orange: How long has this Powermaster been an economic unit?

Mr. Mott: The first one was built and put on the market 10 years ago.

Mr. Orange: And you approached them only three months ago.

Mr. Mott: We did our development work and finally found that they had what we were developing. So we checked with them and they produced what we were just about ready to produce. They were ahead of us.

Mr. Orange: Is the Coal Board aware of this Vekos Powermaster?

Mr. Mott: They have been told of it.

Mr. Orange: Do you know if they made any interventions on your behalf to the Department?

Mr. Mott: Not on this unit, no.

Mr. Orange: Did you ever ask them to?

Mr. Mott: Yes, I have been to see the Coal Board and I told them I would like to get one of these units in, because of what it can do, and to prove it, but so far nothing has happened.

Mr. Orange: Thank you.

Mr. Comeau: Mr. Mott, you have said that we have enough coal for the next 1,000 years. Do you mean Canadian?

Mr. Mott: No, I was talking about the continental coal.

Mr. Comeau: What would you estimate our Canadian resource to be?

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Mr. Mott: Well, our known reserves of coal are not as great as the known reserves of coal in the United States. That is about all I can say to that with any degree of authority, sir.

Mr. Comeau: You stated some time ago that the reason why we are importing American coal is because of the economics of the transportation factor. Have you ever suggested to the government ways to increase our Canadian market by bringing coal from Nova Scotia and Alberta into central Canada, in view of the fact that the government is probably more concerned about this coal than importing American coal?

Mr. Mott: Oh, yes, they are quite concerned about the Cape Breton coal, sir, because if they closed down the mines they would not know what to do with the miners. But do not forget when you are talking about the economics of it, we can lay down the coal at the consumer's plant in Ontario at a price just about—not quite—as low as what it costs to bring the coal to the surface of the mine in Cape Breton. In the United States the production per man per day in some cases gets up as high as 40 tons, whereas if you got 7 tons per day down in Cape Breton in the past you were fortunate.

Mr. Comeau: What is the reason for this, because of the efficiency?

Mr. Mott: They are not modern mines, and because of the way they originally started to mine, it is very difficult to make them modern.

Mr. Comeau: Yes, but could this not be improved?

Mr. Mott: I am given to understand, sir, that rather than to try to improve the old mine, they are now developing new mines down there which they hope will get the production up. Now, I think that you would be far better, rather than to take my word for that, to get somebody like Mr. Blackmore, who is the Vice-President of Devco down there concerned with the mining. He would be able to tell you exactly what the plans are.

Mr. Comeau: Have you ever thought of or suggested to the government new ways, new methods of transportation to get the coal from Cape Breton, or now from Alberta, to the central market?

Mr. Mott: The only better way of transportation is the unit train and that is a long, long distance for a unit train. A unit train does not stop and that is a long, long way for a unit train to go, sir. Again we did import, we did bring Cape Breton coal and we tried to make a drive at it one year and we just about shut down every boiler in the metropolitan Toronto area because they are not built to burn Cape Breton coal. We had our difficulties. Coal is not coal, sir—there are variations in it.

Mr. Comeau: Yes.

Mr. Mott: I presume you are using domestic oil in your own home. If somebody came and put in Bunker C, it just would not burn. The same thing applies with coal. You have to use the right coal.

Mr. Comeau: I understand that modern techniques have resolved some of the problems; that they have taken out some of the sulphur.

Mr. Mott: Yes, there is high sulphur in the Cape Breton coal.

Mr. Comeau: Yes, but at the same time it is quite important that we develop our Canadian resources.

Mr. Mott: I think we will. I am sure that with the procedures they have down there now we will be exporting coking coal in relatively large quantities because there is going

to be a shortage of coking coal and I think we have it. But I do not think it will come this way. I think it will probably go out by boat because that is the most economical way of transporting. And we will probably be selling in Europe or on the Atlantic seaboard. That is my guess: I am not too sure of that.

Mr. Comeau: Thank you, Mr. Chairman.

The Chairman: Mr. Sullivan.

Mr. Sullivan: Mr. Chairman, I had three questions and they have all been asked.

The Chairman: Mr. Aiken.

Mr. Aiken: I am in somewhat the same position, Mr. Chairman, but I have one question that arose out of Mr. Comeau's questioning.

Your associations are basically coal importers, Mr. Mott?

Mr. Mott: That is correct.

Mr. Aiken: Is this the basis of your existence or do you have any reason to deal only in U.S. coal?

Mr. Mott: It is purely a question of economics, sir. U.S. coal laid down in central Canada is the most economical fuel you can buy and you can use, whether it is gas, oil or nuclear.

Mr. Aiken: I think this was well established when we had the Coal Board before us because they indicated then that coal could be imported a few hundred miles just as easily as it could be brought from the Maritimes. But what I am really asking is: are your interests directly with the United States coal or would your coal docks be of any use with Cape Breton coal if it were brought in?

Mr. Mott: We did at one time, sir, when the subventions were on in full force and the government made up the difference in cost between Cape Breton and American coal. We had a considerable amount of coal in central Canada. We tried to swing everybody over to us but as I say, we just about shut down every boiler plant we had it in and finally we

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just had to feed it in a little bit at a time to get rid of it.

Mr. Aiken: In other words, you are in business and the import of American coal at the moment is the cheapest and the easiest way to make a living.

Mr. Mott: If we could import Cape Breton coal at a competitive price and it did the job, yes, we would import it.

Mr. Aiken: One more matter that arose from your brief. It seemed to me that you have the feeling that because you are dealing in imported coal, you do not have the ear of the government as much as others have. Would that be a fair statement?

Mr. Mott: Yes.

Mr. Aiken: And you would really like to have more access through some organization which you feel would deal with coal as an energy fuel rather than just Canadian coal?

Mr. Mott: That is right.

Mr. Aiken: Do you feel that direct contact with the department would be better if you were in a business other than that of importing coal?

Mr. Mott: Not with the department, sir. I would not want to say that. What I was implying—if I did not say it, I was implying it—is that the Dominion Coal Board was wrapped up completely in subventions and as such we were a thing apart; but I would not want to say we would be a thing apart with the Department of Energy, Mines and Resources. No, I really would not want to say that.

Mr. Aiken: You think the situation would be better, then?

Mr. Mott: Oh yes, yes. One thing I might bring out—you are talking about economics. I have not been able to get the complete facts yet but what I have been able to get so far leads me to believe that the Canadian content of American coal might be a good deal better, a good deal more, than the Canadian content of the oil coming in off the Atlantic seaboard because do not forget we are using all Canadian bottoms.

Mr. Aiken: You did mention in your letter to the Chairman the continued use of coal in defence and other government projects. Do you feel that these are actually being cut back?

Mr. Mott: There is no question about it—mainly because of the staff increase. There is only one reason they would turn over a unit from coal to something else: because they save money. But if you are using 21 men on coal and you cut down to 11 men on oil, coal

does not have a chance. That is not the way in industry. There is no place in industry for 21 men on coal when they only use 11 in oil.

Mr. Aiken: Is there evidence also that in government buildings such as post offices and public buildings generally, systems are being converted?

Mr. Mott: I think in all the small buildings they have already been converted.

Mr. Aiken: Do you import and sell only hard coal?

Mr. Mott: No, bituminous coal, soft coal. Hard coal is practically a thing of the past.

Mr. Aiken: I have in mind a specific case of coal being used in a public building and there was complaint of the residue. Is there an answer to smoke coming from the smoke stack?

Mr. Mott: Yes, there is an answer to that. As I say, with the air we have, you can burn 100 per cent coal or you can burn 50 per cent coal and 50 per cent wood or, as I say, you can burn chicken droppings and you will not get any smoke coming from the stack.

Mr. Aiken: Is this the stoker that you have in mind or is it something else?

Mr. Mott: It is the complete boiler unit.

Mr. Aiken: The complete boiler unit. Thank you.

The Chairman: Mr. Chappell.

Mr. Chappell: Mr. Mott, could you go a little further in your last answer, that with this new unit you do not get any smoke coming from the stack?

Mr. Mott: I will go as far as this, if I may go back to what I said before. The two countries which have the severest smoke abatement laws are the U.K. and Germany. These units are operating to their satisfaction.

Mr. Chappell: You are getting some smoke, then?

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Mr. Mott: Obviously I am not going to say that there is absolutely no part of the combustion coming out, but not enough for the most severe critic to...

Mr. Chappell: How does it compare with the pollution from oil and gas?

Mr. Mott: Well, if you are talking about Bunker "C", it is a heavy oil which most of the bigger units use, and they are in very serious trouble now with air pollution.

Mr. Chappell: Worse than you? Worse than with coal?

Mr. Mott: Oh, yes.

Mr. Chappell: So with one type of coal in this new unit, you allege that there is less pollution than there is with a type of fuel oil. What about gas?

Mr. Mott: If we are talking about the present-day relationship, I would say it would be the same as gas; but, as I said before, I am suspicious that the future pollution laws are going to be concerned not with the visible but with the invisible product of combustion. If that is the case, our new units are going to be better off than the gas peoples', but if we are talking about the visible, we would be about the same as gas now.

Mr. Chappell: About the same. Would you say, when we start testing for things that we cannot see today—pollutants that we will worry about in the future—that you will be in a better position?

Mr. Mott: I would imagine so, yes, primarily because of the inherent characteristics of the fuel. Fuel is a rather peculiar thing. I do not think too many people realize, for instance, that because of the inherent characteristics of oil, gas and coal, when they are burned properly the least efficient is gas, the next least efficient is oil and the most efficient is coal.

Mr. Chappell: Is there any scientific publication that supports that view that coal is more efficient than the other two?

Mr. Mott: I would suggest that you go to the Department of Energy, Fuel Research, and see Earl Mitchell. I think he will back that up. He is your expert on it.

Mr. Chappell: Is there any coal now produced in Ontario at all?

Mr. Mott: Not to my knowledge. There is some coal up around James Bay, but it is of a very low grade and I do not think they are producing any of it.

Mr. Chappell: Do you see any future for it?

Mr. Mott: The only future I see for that—and again, this is purely a personal thought—

is that when the demand for energy becomes even greater than it is now, it is quite possible to build a thermal unit right on the site, by James Bay, and pass the electricity down by wire.

Mr. Chappell: Does the American supply, that is, the close-at-hand supply, have an advantage over all Canadian coal, that is, coal from the West and coal from the East, or just certain types?

Mr. Mott: It has an advantage over all the coal that I have seen from the West and from the East, for ore application.

Mr. Chappell: For ore?

Mr. Mott: For Ontario's application of it.

Mr. Chappell: Oh, our application, thank you.

Mr. Mott: For instance, the American coal down here that we import would be absolutely—well, not useless, but it would not be nearly as good as our own Canadian coal for coking.

Mr. Chappell: We have the best coal for coking.

Mr. Mott: Not the best, but better than the coal that we are importing from the United States; it is not as good as the coal we have up here for coking.

Mr. Chappell: Where does that come from?

Mr. Mott: The coking coal?

Mr. Chappell: Yes.

Mr. Mott: Well, all the coal that is going to Japan is coking coal.

Mr. Chappell: That is from Alberta.

Mr. Mott: Yes, and the coal down in Cape Breton is coking coal.

Mr. Chappell: I see. How much does it cost to bring the coal from Alberta to Toronto? Could you give me an approximate idea of what it costs for this unit train?

Mr. Mott: I could not answer that, sir. I do not have the faintest idea. To my knowledge, I have never seen any estimate. I do not think people think it is worthwhile estimating. I think it is too far out of line. But I could not answer the question. That is just my guess.

Mr. Chappell: Thank you.

The Chairman: Those are all the names I have on my list right now. I notice Mr. Harding wants to start on the second round. Is there anyone else for the first round before we continue? All right, Mr. Harding, proceed.

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Mr. Harding: I have a few more questions, Mr. Chairman.

The Chairman: I take it that on the second round we are still going on the five minutes.

Some hon. Members: Agreed.

Mr. Harding: I notice on page 3—someone mentioned this earlier—that Mr. Mott indicated that residual oil coming in to Eastern Canada had to be paid for in American dollars. Is the coal coming into Canada from the United States being paid for in American dollars or in Canadian dollars?

Mr. Mott: Oh, it is in American dollars. But as I say, if you could get all the figures, which I have not been able to get, I would be surprised if the Canadian content of that coal was not higher than the Canadian content of the oil.

Mr. Harding: Are you suggesting on page 3 that rather than import Maritime coal into Ontario, it should remain in the Maritimes and be subsidized to compete with this fuel?

Mr. Mott: No, I am sorry, I did not go quite that far. I said that I was surprised that rather than pay the subsidy for a short haul and use it in Quebec and the Maritimes, they ignore the Quebec and Maritime markets completely and leapfrog right over into Ontario, and pay the higher subvention through higher transportation charges. Now why they would do that, unless it was purely to combat American coal, I do not know.

Mr. Harding: I notice that on page 3 this statement appears:

This appears to be a gross discrimination against our close neighbour, in favour of other more distant and politically unstable countries.

You are thinking of bringing oil in from Venezuela and the Middle East and so on.

Mr. Mott: Well, you can bring oil in from Venezuela or from the Mid-East.

Mr. Harding: How can there be gross discrimination against the United States on coal

imports when our coal imports are sharply increasing every year?

Mr. Mott: But this subvention started when our coal was decreasing the market. It has just started to come back up.

Mr. Harding: But it has been coming back for the last 8 or 10 years, since 1961 anyhow.

Mr. Mott: Yes, it started back in about 1961 or 1962, but this subvention started back in the 1940's.

Mr. Harding: But how can this be discrimination? I presume this coal, south of the border, 200 miles away, whether it is imported by your companies or by the power companies or the steel companies, still comes from the same general area, and I would suggest that this would be anything but gross discrimination, by the mere fact that there is an increase in amounts coming into Canada.

Mr. Mott: I am using the relative term comparing the United States and the other more distant countries, and the mere fact that they did not attempt to sell this coal where the oil was coming in from the Mid-East. Instead of that they jumped over them and only sold it where American coal was coming in. To me that was a discrimination.

Mr. Harding: I see. Now I would like to go back to page 1 again. There are several statements here, Mr. Chairman, that I hope Mr. Mott does not mind us pointing out. I think we should point them out to you. You have this statement—you are talking about the Bituminous Coal Institute of Canada and the Canadian Commercial Coal Dock Operators Association and so on—and then you say:

They are being needlessly and carelessly pushed aside in a flurry of optimism which is centred around a myth that Canada has an abundance of other fossil and nuclear fuels, which will last an eternity.

I would suggest to you that the fuels which we have in Canada, including both nuclear and fossil types, is anything but a myth. We have fantastic coal resources in this country, and I would suggest too that with the development going on as far as electricity is concerned or nuclear production is concerned, Canada has a fantastic future in this.

Mr. Mott: Yes, but in the distant future, sir. You will notice that in the United States the starts of new nuclear plants have dried up. First of all, on our nuclear plants as we

now have them, you are using less than 1 per cent of the potential energy of your fuel. The other 99-plus per cent is being thrown in the scrap heap.

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Mr. Harding: Mr. Chairman, may I just come back to this? Mr. Mott has indicated that these nuclear plants have dried up. Now, this is not the information which I have nor which this Committee has. The information is that nuclear plants are in their infancy...

Mr. Mott: Oh, they are in their infancy, that is right.

Mr. Harding: —and are going to spread, I think, very quickly to every section of Canada and I think all over the United States, and to every country in the world.

The Chairman: Is there anyone else who desires to speak?

Mr. Harding: Maybe Mr. Mott has some information on this.

The Chairman: If not, I will let Mr. Harding continue.

Mr. Aiken: I would suggest that we get the answer to this question.

Mr. Mott: I have a chart here put out by the Atomic Energy Commission in the United States. I do not know if Mr. Virr has this one or not. You will see where this starts; the dotted line is the nuclear and the solid line is the fossil fuel, and fossil is oil, gas and coal. You will see where the fossil fuel dropped off rapidly in the enthusiasm of early 1965-66, but since that time the start of nuclear fuels has dropped rather markedly. However, do not forget that we have yet to find out—and we still do not know how to find out—how to build a breeder plant. Once we find out how to build a breeder plant, then we are in business.

Mr. Harding: Mr. Chairman, my time is over but I would like to come back to this a little later.

The Chairman: I did not mean to chop you off in the middle of your statement. I simply meant that if no one else desired to speak I was going to let you continue for a couple of minutes until you had completed your questioning. Does anybody else have any questions?

Mr. Harding: I would like to continue.

The Chairman: Very well.

Mr. Harding: I am not a nuclear expert, but very recently our Committee went to Chalk River and Dr. Lewis, one of the top nuclear scientists in the world, spoke to us on nuclear development. There is no doubt that with the nuclear plants that are going in now—and they are building some in Ontario—the cost of power is coming down fantastically. Dr. Lewis told us that within a few years' time, with the new developments that are coming, we will be able to get power down to below two mills, and nothing in this country can touch that today.

Mr. Mott: Yes. I think in time we will, sir, but I think the question here is "in time". For instance, I have done some tests both in the United States and Canada to find out the actual cost of the existing plants which are now operating. To my knowledge they have never been published and nobody will give you any information on the cost of a nuclear plant. I do not mean the estimated cost, I refer to the actual cost. As a matter of fact, if you read some of the caustic remarks the Vice-President of California Edison made about costs, it is certainly an eye-opener.

Mr. Harding: Mr. Chairman, I regret I did not bring my atomic file with me today. I could have given you some costs. I do not mean my costs, but costs that have come from the...

Mr. Mott: Are these estimated costs or actual costs?

Mr. Harding: Actual costs.

Mr. Mott: I would appreciate having them.

Mr. Harding: With respect to plants that are in operation and the power that is produced in them.

Mr. Mott: I would appreciate having them if I could because my associates in the United States are trying to find out what the costs of an established plant are down there and they have yet to come up with them, so this would be very, very interesting.

Mr. Harding: This is part of the Ontario Hydro setup.

Mr. Mott: The only one they have now is the Douglas plant.

Mr. Harding: They have others coming in.

Mr. Mott: I know they ran into a lot of extra expense there.

Mr. Harding: Mr. Chairman, I would like to come back and ask Mr. Mott this question. Are you indicating to the Committee that the coal-fired plants can produce electricity cheaper than nuclear plants or...

Mr. Mott: At the present time, yes. That has been the history in the United States, definitely.

Mr. Harding: Do you have those statistics with you today?

Mr. Mott: Not today, but I can get them.

Mr. Harding: Could you perhaps let the Committee have a copy of the...

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Mr. Mott: I can give you a copy of an address which was given by an authority in the United States which shows how the costs are arrived at and where he comes out, I guess.

Mr. Harding: I would like them in Canada.

Mr. Mott: Yes, certainly.

Mr. Harding: We have a number in Canada.

Mr. Mott: I would be pleased to send those to you.

Mr. Harding: Mr. Chairman, I must not take up too much time. Other members have questions to ask.

The Chairman: Thank you, Mr. Harding. I must say that the co-operation that I have had from the members today has been very gratifying. I much prefer this to fighting with time. Mr. Chappell.

Mr. Chappell: I just have one question. I was interested in hearing about your battle with pollution. I want to know how you are able to handle the coal cleanly now. Do you use a sealed bin?

Mr. Mott: Yes, sir. It is pumped in pneumatically.

Mr. Chappell: It is something like oil in a tank, it all goes in. There is a larger container to hold the coal and it comes right from this bin to the burning part.

Mr. Mott: That is right.

The Chairman: Thank you, Mr. Chappell.

Mr. Mott: There are no moving parts in this new unit. No repair work has been done

on any of these units that were built, and the first one was built over 10 years ago. If anyone would like a copy of this brief, they are welcome to it.

The Chairman: Mr. Harding has indicated he has a few questions.

Mr. Harding: I notice in the brief, Mr. Mott, you indicate that some of the Department of Defence bases were thinking of perhaps using gas or some other type of fuel. How much would this affect your organization and the amount of coal that you sell?

Mr. Mott: May I give an example. The Trenton base went over to gas.

Mr. Harding: Yes.

Mr. Mott: That eliminated the coal dock in Trenton. At the present time there is no bulk handling anywhere between Oshawa and Kingston. Any firm that wants bulk handling from the lake cannot install themselves there because there is no way they can handle bulk.

Mr. Harding: What is the quantity involved?

Mr. Mott: Oh, I cannot answer offhand. I do not know, sir. I would only be guessing if I gave you a figure.

Mr. Harding: And you are...

Mr. Mott: But there was enough to warrant keeping that dock active. Also at that time they could bring in salt for the roads, or anything else they needed.

Mr. Harding: And you feel it was competitive with gas?

Mr. Mott: Oh, yes.

Mr. Harding: And with the other.

Mr. Mott: The only reason they could possibly change it economically was the fact that they had double the manpower they actually needed, and that is because of the Staffing Guide, which I claim is incorrect. I took the members of the Civil Defence around to various industrial plants and showed them equivalent size plants that did not use those things.

Mr. Harding: I just have one more question on pollution. I am very, very interested in pollution.

Mr. Mott: We all are.

Mr. Harding: From some of the statistics I have seen I am under the impression that coal is more of a pollutant than these other types of...

Mr. Mott: May I say, sir, that that is a commonly-accepted fallacy. Let us face it, today the user does not know what coal looks like to begin with. When people my age think of coal we think of a dirty coal bin and a man with a bag of coal over his shoulder with a dirty face dumping coal and scattering it around, but that was 30 or 40 years ago. That is not the case with modern equipment.

Mr. Harding: Mr. Mott, does the industry have statistics to back up your statement that as a fuel coal is cleaner than gas?

Mr. Mott: I say it is as clean as gas, yes, with the new equipment.

Mr. Harding: You are talking about with the new equipment.

Mr. Mott: Yes. I am talking about this equipment here.

Mr. Harding: With the Vekos Powermaster, I see. But I presume most of the industry—today does not have this.

Mr. Mott: I will say that any equipment that is 30 to 40 years old, whether it is gas, oil or coal, will be dirty today.

Mr. Harding: I just have another question or two. I hope you do not mind my asking these questions. You say that none of the government departments would test this?

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Mr. Mott: Not yet.

Mr. Harding: How long has this equipment been available?

Mr. Mott: I brought it to their attention about a year ago, I guess.

Mr. Harding: About a year ago.

Mr. Mott: About that.

Mr. Harding: Is it a Canadian or an American patent?

Mr. Mott: It is patented in England.

Mr. Harding: It is patented in England.

Mr. Mott: If I may, Mr. Chairman, I would like to give a little background of this. Our research people realized there had to be a big

improvement on the North American continent in equipment, so we started to do some experimental work along with Mr. Mitchell of the Institute of Combustion and Fuel Technology of Canada. But we listed what we had to have to have what we consider a perfect unit. While we were testing these steps of it we were also looking over the world to find out if anybody had anything near it; because, let us face it, when you go to a drafting board it means five, six, seven, or eight years before you get what you want.

While we were testing these things and doing our preliminary sketching on the drafting board we finally stumbled on one—and, believe me, it was a stumble. We found one that had just everything we had put down, with a few minor exceptions. They made these changes, and it is now the Vekos Powermaster.

Mr. Harding: Mr. Chairman, if I might make this comment, I have had no hesitation in urging this Committee to push some government department to test equipment of this type. I think this should be done in the interests of plain economy and pollution and everything else.

Mr. Mott: My dear sir, if that was the case we could have no further cause whatsoever to protest, because it must stand or fall on its own merits.

Mr. Harding: I think all members of the Committee are interested in economy, and I think tests could be carried out without any trouble.

Mr. Mott: I have made arrangements for these units to be made in Canada and probably exported to the United States from Canada.

Mr. Harding: Mr. Chairman, I think that pretty well covers the questions I had. I wish to thank Mr. Mott for his courtesy in answering them. I hope he does not mind my pinning him down a little.

Mr. Mott: Not at all, sir.

Mr. Harding: This is our job.

The Vice-Chairman: Thank you, Mr. Harding.

Again I would like to express my thanks to the Committee members for keeping their time allocations in line today and for co-operating with the Chair 100 per cent.

I also wish to thank Mr. Mott again for being with us and for his presentation; and also Mr. Lavelle.

Gentlemen, we can arrive at no conclusion today on the brief we have heard and on our discussion. I suggest that the Steering Committee meet on this subject, discuss what we have heard, make a brief, specific report and present it to the Committee as a whole for approval.

There is one thing we must remember, though. I have been informed that if this Committee submits a fifth report to the House we will lose the term of reference which is before us, which is the Annual Report of the National Energy Board. This would interfere with our future hearings with the oil and gas

people, for example, in the West. Therefore, in presenting our fifth report to the House it will be necessary for us to say specifically in it that we desire to continue to study the Annual Report of the National Energy Board. I will now declare this meeting closed.

Yes, Mr. Mott?

Mr. Mott: I would like to take this opportunity of thanking the Committee for hearing me today, and also for the intelligent questions. It makes you feel quite free when you are asked such questions after presenting a brief. Thank you very, very much.

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The Vice-Chairman: The meeting is adjourned.

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